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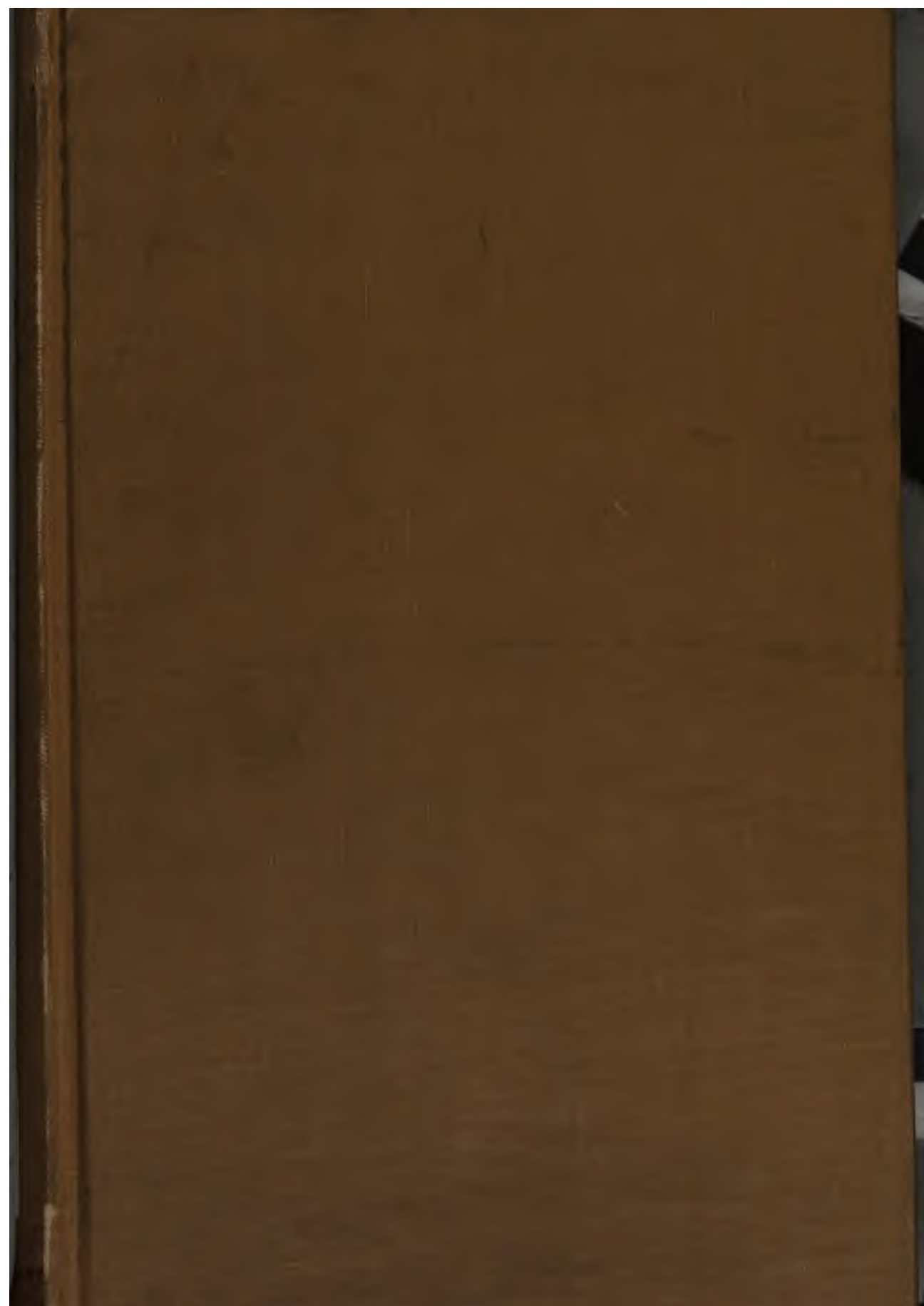
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COPPER PLATE FROM THE ETOWAH MOUND.

**Masked Dancer dramatizing the Eagle Man—one of the Mythological Divinities of the Southern Mound-Builders. It shows the manner of wearing Banner-Stones as well as the shape of the war clubs.**

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No. I.

## THE NUMERAL SIGNS IN THE PALENQUE TABLETS.

BY LEWIS W. GUNCKEL.

It is enigmatical to estimate how great an epoch of time must elapse before the researches of diligent students will make us as familiar with the graphic system of the ancient Mayas, as we are with the early hieroglyphic system of Egypt, and the cuneiform inscriptions of Assyria. Unfortunately we have no key like the "Rosetta" stone to aid us in these studies, and what little we are to learn, must be deduced from their ancient inscriptions, manuscripts, traditions and mythologies. Curious hieroglyphs are found on the monuments, tablets and statues from Yucatan, Tabasco, Chiapas, Western Honduras and a few other neighboring localities, including all of Central America inhabited previous to, or during the time of the Conquest, by tribes of the Mayan linguistic stock. As far back as 1830 some French students organized the *Societe Americaine de France* so as to investigate with greater success, these crumbling palaces, unique inscriptions, and strange manuscripts; and even now annual congresses are still held, to discuss and investigate these matters. At the present time there are a number of extremely valuable and interesting collections of photographs, tracings, casts, original sculptures, tablets, idols and miscellaneous smaller antiquities in many of the large museums in Boston, Washington, New York, London, Paris, and the City of Mexico, which cannot fail to excite a lively interest in the study of these subjects, and encourage researches and investigations, as to the signification of the strange hieroglyphs which are so numerous on the sculptures. One eminent authority has called attention to the large number of inscriptions preserved upon the temples, altars and pillars of Yucatan, and looks forward with great confidence to see them deciphered before many years, adding that the only serious difficulty which obstructed the student in his investigations, was the want of knowledge of the ancient Maya language.<sup>1</sup> Dr. Chas Rau had a

(1) "The Ancient Phonetic Alphabet of Yucatan," by D. G. Brinton, M. D., New York, 1870, p. 7.  
The Palenque Tablet," by Dr. Chas Rau, Washington, D. C., 1879, pp. 59-60.

less encouraging view on this subject, and said that he could not be expected to express any hope concerning the decipherment of the Palenquean glyphs by the means at present at our command. He did not believe that Landa's key would suffice, and considered that the prospects were rather gloomy for a future solution of the difficulty, unless we could be aided by new discoveries which would prove an efficient help for obtaining that most desirable result.<sup>2</sup> In this he held the same view as Brasseur de Bourbourg who also had been looking forward to some future discovery of an ancient manuscript or inscription which would aid us in these difficult investigations. While this should not defer us from investigations at the present time, the chances for some future discovery tending towards this end, are exceedingly bright, when we take into consideration the vast expanse of unexplored jungles in this region. We learn from Mr. Mercer, through his invaluable investigation in the caves of Yucatan, that no earlier inhabitants had preceded the builders of the ruined cities in Yucatan; that the people revealed by the caves had reached the country in geologically recent times; and that these people, substantially the ancestors of the present Maya Indians, had not developed their culture in Yucatan, but had brought it with them from some where else.<sup>1</sup> From where did they come? How long ago did they come? And where did they develop their culture, their architecture, their graphic system? These questions alone have caused some of our students and explorers to adopt the most wild and imaginative theories, inviting censure to their real investigations, as well as their erratic and unjustifiable theories. The unexplored wilderness south of Lake Chickankanab in Central Yucatan may perhaps have in store for us, many new temples, palaces, inscriptions and sculptures far surpassing any now known to us. This wonderful region has yielded its surprising ruins very slowly and by gradual degrees, for we have been continually obstructed by the seemingly endless forest matted with dead leaves. Heat and thirst greatly impede the investigations in this country; the stony soil thwarts the excavator; the insects make life burdensome to all. Berendt's Map of Yucatan, as we learn from Mr. Mercer, is dotted thick with signs of ruins, and one can hardly drive five miles over the eastern roads without seeing a crumbling mound of stones, exposing the walls of a vault.

The archæologist naturally searches for traces of the gradual development of their graphic system. He would expect to find the more primitive forms of picture writing, pictographs and rude rock sculptures, showing the gradual transition stages between the first rude attempts and the intricate and complicated glyphs so common at Palenque and Copan. It is surprising that we have so few records of discoveries of this kind. It is a strong link in

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(1) "The Hill Caves of Yucatan," by Henry C. Mercer, Philadelphia, 1896, p. 177.

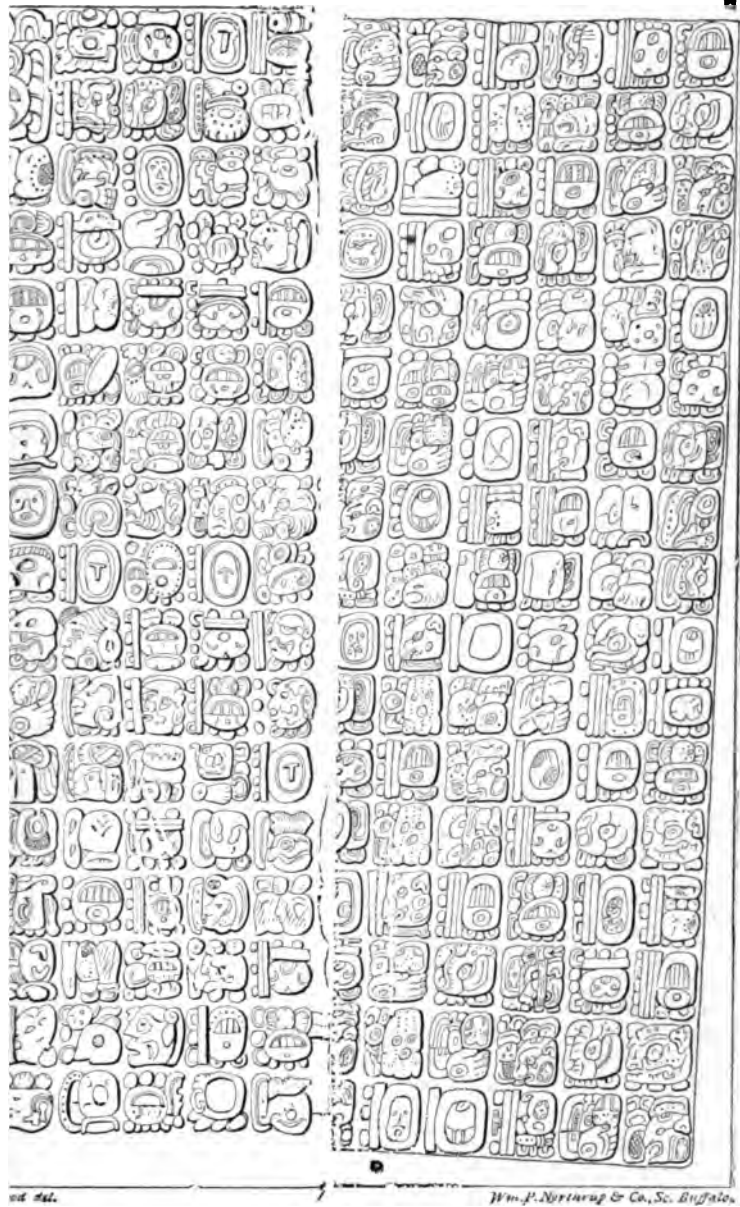


PLATE I—HIEROGLYPHICS ON THE TABLET OF THE CROSS.

the chain of evidence pointing out the fact that the Mayas must have developed their culture elsewhere. Had they developed their graphic system in Yucatan, does it not seem a just conclusion that we should find innumerable examples of their first rude attempts and gradual improvement in this form of pictography, until their final system was adopted? Possibly later discoveries will bring these disputed points to light; and it may be that the earlier explorers considered these rude rock sculptures of no importance. Mr. Mercer found rude rock carvings in the cave at Actun Ceh, which reminded him of the work of the North American Indians, also some in the cavern of Loltum which resembled symbols rather than pictures. Three of these consisted of rectangular lines drawn across cartouche-like enclosures; and one was a rudely cut stalagmite suggesting a human face.<sup>1</sup>

A fact which is at once apparent to the student after some investigation is that the graphic elements found in the mural inscriptions differ considerably from those which we find on the manuscripts. Dr. Brinton<sup>2</sup> considers that there is a primitive identity of elements which is demonstrable in them all, and that they differ only to that extent which we might expect from the variation of the material, or the period, and in the skill or fancy of the artist. At a first glance at the sculptured tablet or a manuscript we are surprised at the great number, and seemingly endless variety of glyphs, yet the simple elements are not so numerous as we would imagine. Very probably the reason why we imagine that the varieties are so numerous, is that they are mostly composite in formation, and are made up of a number of radicals variously arranged which at first glance confuse us. It is the same principle as with our nine numerals and zero, with which we form so many varieties in numbers; or with our alphabet, with which we form so many words of various meanings. Although some of the glyphs appear extremely complicated, on closer examination, it can be seen that this is caused by certain frequently occurring parts or forms which are oftentimes found in various different positions and relations. Added to this we must take into consideration that there are many variants to each regular glyph form or simple character, differing from them, to a more or less extent, dependent on the skill or care of ancient sculptors,—not to mention the differences caused by the various materials used for these records. It is the opinion of Dr. Seler<sup>3</sup> and also of Dr. Brinton<sup>4</sup> that if we were without doubt, aware of the signification of a hundred or so of these simple elements, that these mysterious inscriptions could conceal no longer, the general meaning of their contents.

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(1) "The Hill Caves of Yucatan," by Henry C. Mercer, Philadelphia, 1896, p. 103.

(2) "A Primer of Mayan Hieroglyphics," by D. G. Brinton, p. 10.

(3) *Verhand Berliner Anthropol. Gesell.*, 1887, s. 231, by Dr. Seler.

(4) "A Primer of Mayan Hieroglyphics," by Dr. D. G. Brinton, p. 10.

It is extremely unfortunate that so many of the drawings of the inscriptions cannot be relied upon for accuracy, and that many of the photographs show such dim outlines of the various characters, and were taken in such poor light, that they can give us but little practical aid, in the comparison and interpretation of the glyphs. Many of the significant characteristics of the various designs, are of such delicate and intricate form that,—on tablets and inscriptions which are partly defaced, or worn by erosion, and are afterwards carelessly drawn or photographed by the explorer, it is oftentimes impossible for the student to make out the necessary contours and designs with their prefixes, suffixes, superfixes and postfixes, not to mention the intricate interior designing. Mural inscriptions of great interest have been found at Chichen Itza and especially at Palenque. They are also found on the Stelæ and monuments at Copan and Quirigua, Tikal and many other points. Mr. Saville was of the opinion that the inhabitants of Copan, Honduras, were more literary in character than even those of Palenque, as there have been found there twenty-four Stelæ, all of which have inscriptions, besides altars, slabs, and hieroglyphic steps in large numbers. He adds further that pottery vessels and potsherds have been found bearing glyphs either painted or engraved, and that the potsherds have been found in such quantities as to show that thousands of their vessels had hieroglyphic inscriptions on them.<sup>1</sup> The inscriptions at Palenque, which are so admirably shown in Mr. Catherwood's drawings, are perhaps the best adapted for purposes of study, owing to their wonderful state of preservation, and unusual neatness and regularity of the characters. We learn from the earlier researches in the manuscripts and codices that the numeral five was represented by one bar, (See Fig. g); the numeral ten by two bars, (See Fig. m); and the numeral fifteen by three bars, (See Fig. s). The intermediate numbers were represented by dots; one dot for one, (See Fig. a); two for two, (See Fig. c); three for three, (See Fig. e); and four for four, (See Plate II). A bar and a dot for six, (See Fig. i); two bars and a dot for eleven, (See Fig. o); three bars and a dot for sixteen, (See Fig. u); and so on up to nineteen. This system of numerals seems to run only to the number nineteen, and the number twenty is formed in another way.

In the mural inscriptions, the numerals are formed in the same way as in the manuscripts, with some important exceptions, namely that the one dot of the numerals is almost invariably accompanied on each side by an ornamental sign in the form of a loop, (See Fig. b). Thus the numeral signs containing one dot, such as the numeral one, (See Fig. b); six, (See Fig. h); eleven, (See Fig. n); and sixteen, (See Fig. t); are almost always found

(1) "A Comparative Study of the Graven Glyphs of Copan and Quirigua," by Marshal H. Saville, in "Journal of American Folk Lore," July-September, 1894.



in this form. The other forms of numerals are regular, but the two dots for the numeral two, are also generally ornamented in the same way, (See Fig. d); four by four dots, (See Fig. f); five by one bar, (See Fig. g); six by a bar and one dot, with looped or ornamental frame work, (See Fig. h); and so on, up to nineteen. Some exceptions occur, however, which we will mention later. This frame work or ornamentation of the numeral signs for one, two, six, eleven and sixteen, was first suggested by Thomas<sup>1</sup> and later by Seler<sup>2</sup> who studied it on the glyphs

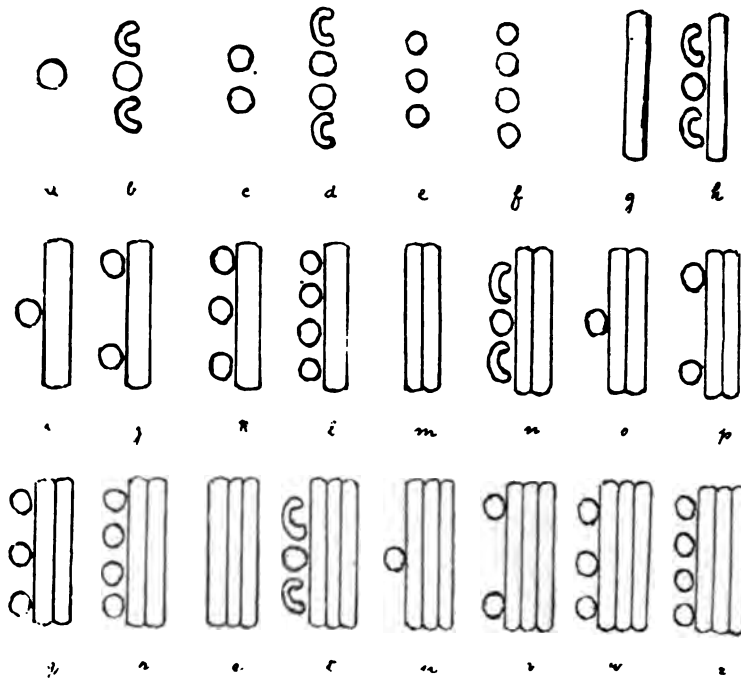


Plate II

from Copan. In order to satisfy myself on this point, I have made a careful search on the five Palenque tablets, and obtained the following results, which leave no doubt upon the matter. It necessitated a detailed study of the inscriptions, but is of especial interest on this point. I have counted over the various mural

(1) "A Study of the Manuscript Troano," by Cyrus Thomas, p. 202, Washington, D. C. 1882.

(2) "Is the Maya Hieroglyphic Writing Phonetic," by Dr. Seler, p. 6, "Science," Vol. XXI, No. 515, Jan. 6, 1893.

inscriptions, noting carefully the various points, which I think, have been productive of valuable results. It is necessarily a slow and tedious process, yet the results seem to be a fair recompense. It is of value to know: 1st—The total number of occurrences of the various ornamented numeral signs. 2nd—The number and the percentage of the whole number of glyphs having numeral signs as prefixes. 3rd—The number and the percentage of the whole number of glyphs having numeral signs as superfixes. 4th—The number and the percentage of the whole number of glyphs representing deities. 5th—The total number of glyphs on the inscriptions. 6th—The percentage of the whole number of glyphs representing day signs. 7th—The percentage of the whole number of glyphs representing month signs. 8th—The total number of occurrences of the various classified glyphs.

*The Tablet of the Cross*<sup>1</sup> at Palenque has a total of 233 glyphs and contains 222 glyphs which are nearly perfect, and 11 which are defaced. Of these 53 are deities. 96 glyphs have numeral signs at the left side as prefixes and 19 have them on top as superfixes, 13 of which are superfixes to *Cheun*, and 6 to miscellaneous glyphs. There are 36 month signs and 34 day signs.

We find in this tablet the following ornamented and regular numeral prefixes.

	Ornamented.	Unornamented.
The numeral one .....	11	0
" " two .....	12	0
" " six .....	7	1
" " eleven .....	3	1
" " sixteen .....	2	0
Total .....	35	2

We then have thirty-five ornamented forms for these numeral signs with two exceptions. We find the following ornamented and regular numeral superfixes.

	Ornamented.	Unornamented.
The numeral one .....	2	0
" " two .....	0	0
" " six .....	1	0
" " eleven .....	1	0
" " sixteen .....	0	0
Total .....	4	0

Thus we have four ornamented forms for these numerals with no exceptions.

*Tablet of the Outer Corridor of No. 1, Casas de Piedra, Palenque, Right Hand Side Tablet* in Stephen's "Incidents of Travel in Central America," Vol. II, facing p. 242. This (like that of the left hand side tablet) is twelve rows deep and twenty

(1) In referring to this "Tablet of the Cross", I mean the tablets on each side of the "Cross," shown in Plate I, and the groups surrounding the central figures.

rows wide of glyphs, making a total of 240 glyphs. Of these 34 represent deities, and the balance 206 are of other glyph forms<sup>1</sup> 76 of the glyphs have numeral signs at the left side as prefixes, and 30 have them on top as superfixes, of which 4 are *Chuen* and 2 *Ahau*.

In this tablet we find the following numeral signs as prefixes:

	Ornamented.	Unornamented.
The numeral one .....	6.....	0
" " two .....	1.....	0
" " six .....	1.....	0
" " eleven .....	2.....	0
" " sixteen.....	1.....	0
Total.....	11.....	0

Thus we have eleven ornamented prefixes, and none unornamented for these five numerals. In this tablet we find the following numeral superfixes:

	Ornamented.	Unornamented.
The numeral one .....	2.....	0
" " two .....	0.....	0
" " six .....	0.....	3
" " eleven .....	1.....	0
" " sixteen .....	0.....	0
Total.....	3.....	3

Thus we have three numeral prefixes ornamented and three exceptions for the numeral six.

*The Tablet on the Back Wall of Altar, Casa, No. 3, Palenque*, presented in the frontispiece of Stephen's "Incidents of Travel in Central America," Vol. II, is also of great interest. It contains 144 glyphs of which 41 are of deities and the balance, 103, of other glyph forms. This contains 47 glyphs having numeral signs at the left side of the glyphs as prefixes, and 10 having numeral signs at the top as superfixes. In this tablet we find the following numeral prefixes:

	Ornamented.	Unornamented.
The numeral one .....	2.....	0
" " two .....	1.....	1
" " six .....	1.....	0
" " eleven .....	2.....	0
" " sixteen.....	1.....	0
Total.....	7.....	1

(1) I have made two classified lists, or catalogues, of all the other glyph forms occurring in the mural inscriptions, dividing them into deities and miscellaneous glyph forms. The deities, I classify as God "A"; God "B", etc., and miscellaneous glyph forms as Glyph Form "A"; Form "B", etc. Interesting results and valuable analogies, have been obtained, which I hope to present in an article in the near future. For instance, in the Tablet of the "Cross" we learn that the following occur so many times each. Counting in those above mentioned, we find also 19 miscellaneous glyphs of deities occurring once each, 9 of "God A"; 3 of "God B"; 3 of "God O"; 2 of "God W"; 2 of "God CX", and 5 defaced glyphs of deities. There are 20 miscellaneous classified glyphs of one occurrence each; 19 of glyph "Form A"; 17 of glyph "Form C"; and 6 of glyph "Form D"; and 52 unclassified glyphs, making a grand total of 233 glyphs.

Thus we have a total of seven ornamented, with only one exception. The ornamented superfixes for the numeral *two* occurs twice and no other forms for these numerals occur as superfixes.

*The Tablet of the Outer Corridor of No. 1, Casas de Piedra* in Stephen's "Incidents of Travel in Central America," Vol. II, facing p. 342, No. 2. One half of this tablet is unfortunately entirely defaced, leaving only the squares entirely worn off or defaced where the regular rows of glyphs once were. This tablet contained originally 240 glyphs, of which over 120 are now defaced. Of those remaining 26 are deities and 94 are of other glyph forms, 38 glyphs have numeral signs at the left side as prefixes, and 6 have them on top as superfixes. In this tablet we find the following numerals used as prefixes:

	Ornamented.	Unornamented.
The numeral one.....	4.....	0
" " two.....	1.....	0
" " six.....	1.....	0
Total.....	6.....	0

No forms for these numerals are found in this tablet used as superfixes.

*The Tablet of the Inner Wall of Casa, No. 1, Palenque*, is presented in Stephen's "Incidents of Travel in Central America," in Vol. II, facing p. 343. This tablet contains 140 glyphs, of which 40 represent deities, and 100 are of other glyphs; while 22 glyphs have numeral signs as prefixes, and only three have them on top as superfixes, of which one is *Chucu*.

We find the following numeral signs used as prefixes:

	Ornamented.	Unornamented.
The numeral one.....	17.....	0
" " two.....	0.....	0
" " six.....	0.....	0
" " eleven.....	0.....	0
" " seventeen.....	0.....	0
Total.....	17.....	0

Thus we have a total of seven ornamented numeral signs with *not one exception*. No others occur such as the numerals one, two, six, eleven and sixteen and no superfixes for these forms are found.

The total of representations of glyphs in the five Palenquean tablets give interesting results for aid in this study. We will first take the ornamented numeral prefixes. The total number of occurrences of the ornamented numeral prefixes are as follows:

	Ornamented.	Unornamented.
The numeral one.....	40.....	0
" " two.....	15.....	1
" " six.....	13.....	1
" " eleven.....	6.....	2
" " sixteen.....	3.....	0
Total.....	77.....	4

Thus in the five Palenquean tablets we have seventy-seven ornamented numeral forms for the numerals one, two, six, eleven, and sixteen, used as prefixes, with only four exceptions. Next we will take the numeral signs used as superfixes on the top of the glyphs. We give the list below:

	Ornamented.	Unornamented.
The numeral one .....	4.....	2
" " two .....	0.....	2
" " six .....	3.....	1
" " eleven .....	4.....	0
" " sixteen .....	0.....	0
Total .....	11.....	3

The number 16 is not found at all. In the five tablets we have a total of eleven ornamented forms for the numerals one, two, six, eleven, and sixteen used as superfixes, with only three exceptions. The percentage of the whole numeral of perfect glyphs having number prefixes is 31.7-8 per cent; of those having numeral superfixes is 7.6-8 per cent; and of those representing deities is 22.1-5 per cent. A noticeable feature in most all of the manuscripts and mural inscriptions is the fact that they contain a great number of signs for numerals. It is obvious that these records consist mainly of one thing, *Counting*, and it is not improbable to suppose, when we take into consideration the great number of day and month signs which are found throughout these inscriptions, that they served in some way, as time counts, or some sort of almanacs.

The total results are as follows:

Total number of glyphs in the five tablets.....	1001
Defaced and worn glyphs.....	135
Nearly perfect glyphs.....	875
Representations of deities.....	194
Glyphs with numeral prefixes.....	279
Glyphs with numeral superfixes.....	68
Glyphs with ornamented numeral prefixes.....	77
Exceptions to the above .....	4
Glyphs with ornamented numeral superfixes.....	11
Exceptions to the above .....	3

The numeral sixteen could not be found used as a superfix.

The highest numeral found as a superfix was thirteen.<sup>1</sup> Of the eleven glyphs having numeral superfixes found in the Palenquean mural inscriptions nine were of *Chuen*, which is the most common glyph having double sets of numerals.

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(1) Two higher numerals (nineteen and fourteen) are found in the Tablet on the Outer Corridor of No. 1, Casa de Piedra, Palenque, Right Hand Side, Plate III, but they are not used with the day or month glyphs, and are of no importance in this connection.

PREHISTORIC MIGRATIONS IN THE ATLANTIC  
SLOPE OF NORTH AMERICA.

BY PROF. CYRUS THOMAS.

## THE SIOUAN TRIBES—PART III.

Having pointed out some of the difficulties we must encounter in adopting this theory of an eastern origin, we will return to the discussion of the migration of particular tribes and stocks.

Our first reference will be to the movements of the Siouan tribes. The locations of the scattered elements have been mentioned, and it is well known that the great body of the family, at the earliest notice of them obtained by Europeans, was located in the northwest, about the head waters of the Mississippi.

According to Lederer (1670) the Indians of the Piedmont section of Virginia and Carolina—identified by Mr. Mooney as chiefly Siouan—had been driven by an enemy from the northwest and directed to settle here by an oracle, according to their tradition, more than four hundred years before the time of this visit. Lawson (1700), speaking of the Indians of Virginia and Carolina, says they claimed that their ancestors came from the west, where the sun sleeps. The Catawba tradition refers to a northern home. As recorded by Schoolcraft, they formerly lived in Canada, but were driven southward by the Connewangos (Iroquois). When they reached the sources of the Kentucky river they succeeded in inflicting a severe blow upon their enemies. Here they divided into two bands; one, going south, was united with the Choctaws and Chickasaws; the other, turning toward the coast, stopped for a time in Virginia and then moved on, finally settling on the Catawba river in South Carolina. Before final settlement they were engaged in severe conflict with the Cherokees who claimed the territory invaded. A permanent peace was at last agreed upon, and Broad river was established as a dividing line between the two tribes. This migration is assigned by the tradition to the early part of the seventeenth century, as it introduces the French as allies of the Connewangos in their war upon the Catawbas. Notwithstanding its doubtful authenticity, and introduction of fictitious statements, Mr. Mooney remarks in regard to it: "According to a Catawba tradition related in Schoolcraft, the people originally came from the north, driven by the 'Connewangos,' by which is evidently meant the Iroquois. They settled on the Catawba river, and after a desperate struggle with the Cherokees, who claimed prior rights in the region, they succeeded in maintaining their position; and Broad river was adopted as the boundary between the two tribes. So much of the tradition may be accepted as genuine." The remainder he rejects as absurd. He concludes that



the statements and traditions concerning the eastern Siouan tribes, taken in connection with what we know of the history and traditions of the western tribes of the same stock, "Indicate the upper region of the Ohio—the Alleghany, Monongahela and Kanawha country—as their original home, from which one branch crossed the mountains to the waters of Virginia and Carolina, while the other followed along the Ohio and the lakes toward the west."

The statement by Gravier, who descended the Mississippi in 1700, that the Ouabachi (now partly the Ohio) was "called by the Illinois and by the Ouamiamis (Miamis) the river of the Akansea, because the Akansea (Quapaws) formerly dwelt upon it" may be accepted as based on fact, and as will be shown a little farther on, is fortified by other evidence. The tradition of the Osages, mentioned by Schoolcraft, that they were formerly united with the Quapaws, and parted with them while on the Ohio (probably originally given by them as on the Ouabachi) may, if sustained by linguistic affinity, be accepted. The particulars of this tradition, given by Major Sibley as recorded by Featherstonhaugh, must be taken with a very large grain of doubt. That this tradition in its original form identified the fork of the Alleghany and Monongahela and the falls of the Ohio at Louisville as the particular localities, is in the highest degree improbable. They should therefore be rejected, as these designations by modern names are evident additions by modern relators.

Gallatin says "The Osages consider themselves the aborigines; but the traditions of these five tribes [Ioways, Missouris, Ottoes, Omahas, and Puncas] is, that at a distant epoch they, together with the Winnebagoes, came from the north; that the Winnebagoes stopped on the banks of Lake Michigan while they, continuing their course southerly, crossed the Mississippi and occupied the seats in which they were found by the Europeans." He also says "the Missouris were originally settled at the junction of the river of that name [Missouri] with the Mississippi. They were driven away by the Illinois." Although it is apparent that the tribes which, according to the tradition, came from the vicinity of Lake Michigan, and moving southwest, crossed the Mississippi, were, during part of their course, east of this river, attention is called to the fact that in the statement in regard to the Missouris, above quoted, the narrator does not say that they were east of the Mississippi at the point mentioned. Whether they were on the east bank or across the river on the other bank may appear to be a question of little importance. This, however, is a mistake, as will be shown.

As neither Mr. Mooney nor Dr. Hale claim that the differentiation of the family took place in the historic seat of the eastern group—that is in Virginia and Carolina, or either—but

somewhere in the Ohio valley, let us see what other testimony can be brought to bear upon the question, and how far it tends to support the views of these authors. It is apparent from the geography that if these eastern tribes came from the great body of the stock located in the northwest, they would have been in the valley of the Ohio at some time during their migration. On the other hand there is no other reason for bringing them from the northeast to the Ohio and scattering them thence southeast, northwest, west and southwest, except to sustain a theory. The former supposition is evidently more simple and natural than the latter.

It is well known that there are in Wisconsin and the immediately adjoining sections of Iowa and northern Illinois certain peculiar classes of earthworks, known as "effigy mounds," "elongate, or wall-like mounds" and "chain mounds." It is also known that, with some few exceptions, earthworks of these types are confined exclusively to that section, so far as the region east of the Mississippi is concerned. As it is now generally conceded that the Indians were the mound-builders, there is no valid reason forbidding the conclusion that these peculiar works are attributable to the people of the Siouan family who inhabited this northwestern region. On the contrary, as the author has shown in his "Report on Mound Explorations" in the 12th Annual Report of the Bureau of Ethnology, there are strong grounds for assuming they were the authors of these and probably other works of that section. One of the most noted of these ancient monuments is that known as "Aztalan," in Jefferson county, Wisconsin. The peculiarity of this work, which is an inclosure or fort, including one or two important mounds, consists in the fact that the walls resemble chains of connected, circular mounds, or walls with bastion-like projections reembling small circular tumuli. This peculiar type of works is, with two or three exceptions, confined strictly to the effigy-mound district. One of these exceptions is found in Vanderburg county, Indiana, on the bank of the Ohio river; another occurs on the Tennessee river in Hardin county, Tennessee.

In regard to the Indiana work, the author, who made a careful personal examination of it and the one in Wisconsin, remarks as follows in the Report above referred to: "In the construction of the walls, these works bear a remarkable resemblance to those of Aztalan in Jefferson county, Wisconsin. The work in Vanderburg county, Indiana, in the group known as 'the Angel Mounds,' evidently belongs to this type, and was probably built by the same people." This conclusion he is still inclined to believe is correct, and will be concurred in by any one who will make a careful examination of these ancient works. These may, therefore, consistently mark the line of migration of the Biloxi and Quapaws, the former continuing southward, and the

latter crossing near the south line of Tennessee to the west side of the Mississippi. If the latter were on the Ohio, and were afterwards found in Arkansas, it is evident they must have crossed the Mississippi somewhere. The route cannot be judged of at the present time by the physical conditions, as, in this comparatively level portion of the country, it would be governed chiefly by the opposition of the tribes then inhabiting this section. The westward route outlined would lay along the northern boundary of the Chickasaw country.

This supposition agrees with one fact in Gravier's statement which seems to have been overlooked. The name "Ouabachi" as used at that time did not include the Ohio above the mouth of the Wabash, but the Wabash and the Ohio below its mouth. Gravier, as the quotation given above shows, says that the "Ouabachi" was called the Akansea by the Illinois and Ouamiamis. Immediately following the quotation given, he says, "Three branches are assigned to it, one that comes from the northwest, called the River St. Joseph, which the Indians call properly the Ouabachi. The second comes from the Iroquois, and is that called by them Ohio; and the third from the S. S. W. on which are the Chaoüanoüa, and all three uniting to empty into the Mississippi, it is commonly called Ouabachi; but the Illinois and other Indians call it the river of the Akansea." Now it is true the Angel Mounds are some miles above the mouth of the Wabash, being in the vicinity of Evansville, but they are near enough to the Wabash to suppose the Indians being best acquainted with this river would speak of the tribe, which may have extended over Posey county, where quite a number of mounds are found, as on it. This statement by Gravier shows also how unreliable are those versions of the traditions relating to the residence of western Siouan tribes east of the Mississippi, which place them on particular parts of the Ohio, or in fact anywhere on the upper or middle Ohio. If the supposition presented be accepted, it must be conceded that the Akansea came from the effigy-mound region.

In Licking and Adams counties, Ohio, and Putnam county, Georgia, are the only effigy mounds east of the Mississippi outside of the effigy mound region. By supposing that the Siouan tribes of the southeast broke away at some time in the prehistoric past from the main body in the northwest, and during their wanderings toward their historic seats, built these tumuli, we obtain a reasonable, as well as consistent explanation of their existence at the points where they are found. Otherwise we are wholly at sea in regard thereto.

It has been suggested above, that the Quapaws (Akansea) were located for a time in Vanderburg county, Indiana, and in their migration southward, probably following the Tennessee river, stopped for a time in Hardin county, Tennessee, and then moved.

westward across the Mississippi river. This will be consistent with the position in which De Soto found them. That this adventurer encountered the Chickasaws in Pontotoc or Union county, Mississippi, then marched a short distance down the Tallahatchee river, and crossed the Mississippi somewhere in the vicinity of what is now the site of Helena, is susceptible of reasonable demonstration. It is here alone, in the termination of Crowley's ridge we find the conditions on the west bank that meet the requirements of the narrative. There are no grounds for supposing he moved north and crossed in the vicinity of Memphis; and moreover the physical features of the west bank at that point are entirely lacking in some of the essentials of the narrative. Any one who has been on the bank of the Mississippi in this section, in a dry season and time of low water, as we know was the case when De Soto crossed, will readily understand what a stranger in the country would mean by speaking of the "bluff."

We will now return to the western tribes, of whose traditions partial mention has been made. The Osages, as has been mentioned, claimed to have lived with the Quapaws on the Ohio (probably the Ouabachi). Whether at the point fixed by the Angel Mounds, or further up the Wabash is a question which cannot be answered at the present day with any degree of certainty. They may have moved down the Ohio to its mouth, crossed over into Missouri and moved northward as suggested by Mr. Dorsey, but there is no good reason for believing that any of the other tribes mentioned (Omahas, Poncas, Missouris, etc.) ever lived on the east side of the Mississippi south of the mouth of Illinois river.

Lewis H. Morgan, in his paper on "Indian Migrations," says that the Kansas Indians "were formerly established on the west bank of the Mississippi, a few miles above the mouth of the Missouri. Their village at this point, was called *Ne-bla-she-ta-ma*, which signifies the blue river, and this was their name for the Mississippi, whilst they called the Missouri *Ne-sho-ja*, the muddy river." As we have here the ancient names, the tradition seems to be genuine.

The tradition of the Iowas as given by Schoolcraft and Mr. Dorsey, locates the first known home of the Iowas at the fork of Rock and Mississippi rivers. According to this, they lived "on a river which runs from a lake to the Mississippi, from the east, and on the east side of that river. Our fathers and great fathers lived there for a long time, as long as they could recollect."

Instead of locating the other tribes about the present site of St. Louis and thence south to the mouth of the Ohio, it is more likely that the area occupied was in the fork of the Illinois and Mississippi and along the western side of the latter stream. The mounds of this section bear, in some respects, considerable

resemblance to one class of those of the Wisconsin, or effigy-mound district. The custom of placing mounds in lines, observed in this area and on the opposite side of the river in Missouri, reminds us of the same custom followed in the Wisconsin district. Add to this the fact alluded to in the author's Report on Mound Explorations, that the elongate mounds, a strictly peculiar feature of the effigy-mound district, extend farthest southward in northern Illinois, in the direction of the area mentioned, reaching the vicinity of Peoria on the west side of Illinois river, and we have apparently the line of migration of these western or southwestern tribes. This also agrees precisely with the southwestern movement of the tribes as given in the tradition recorded by Gallatin. We may add further that the builders of the Cahokia mounds, who must have formed a strong tribe, probably retained possession of this locality at that time. This will furnish an explanation of the obstacle which prevented the further progress southward, on the east side of the Mississippi, of these Siouan tribes. Who the builders of these mounds were we shall not undertake to say at this point; it is reasonable to assume, however, they were not these Siouan tribes, unless it can be shown they constructed such tumuli elsewhere in the north.

It is apparent from what has been stated that as consistent an explanation of the movements of the scattered tribes of the Siouan family can be given on the supposition that they parted from the main body in the northwest, as upon the theory that the migration was westward. The only possible basis for the latter theory is the supposed archaic type of the eastern dialects. Not being a professed linguist, the writer does not feel qualified to discuss this point, but would suggest the possibility that they are more corrupt rather than more ancient. It may be added further, the theory that the oldest dialect is always nearest the primal home may not always hold good. That this is true where the spread has been by growth and increase in numbers, is doubtless correct; but there is no apparent reason why it should always be true where there is a division and wide separation. That the younger member is more likely to seek other quarters is granted, yet there are several conceivable causes which might reverse this rule. Hunter in his narrative says, "Separations sometimes take place from party dissensions, growing generally out of the jealousies of the principal chiefs, and not unfrequently out of petty quarrels. In such instances, in order to prevent the unnecessary and wanton effusion of blood, and consequent enfeebling of the nation, the weaker party moves off." We have only to suppose that in some cases the elder member is the weaker, in order to find an instance where the elder dialect will not indicate the approximate location of the original home.

The same writer says that in his day there existed "an impla-

cable enmity between the Sioux and Kansas, which originated at no very remote period, in the former having forced the latter to abandon their hunting grounds, on the Missouri. The Osages have a similar tradition in regard to their removal, though it does not extend to the nation that coerced them to the measure."

Another admitted fact which has a decided bearing on this immediate question, and which does away with the necessity of the above supposition, is, that the Winnebago dialect compares in respect to its antiquated form to that of the Tuteloes. Dr. Hale says they stand to each other as the Huron to the Mohawk. A separation at an early date in the northwest of the Tuteloes from the Winnebagoes would fully account for the fact on which the theory of an eastern origin has been based. There is, however, another consideration which apparently offers an insuperable objection to this eastern theory. This is the tradition of the southern or southwestern tribes that they were originally off-shoots from the Winnebagoes. "A comparison," says Dr. Hale, "of the letter changes between the Winnebago and the western dialects (as shown in an interesting paper on the subject read by Mr. Dorsey before the Association) left no doubt of this derivation."

The general trend therefore of the evidence is that the place of dispersion was in the northwest and that the course of migration has been south and southeast.

Before leaving the subject let us see if it be possible to trace back the wanderings of the family to a still earlier home. Schoolcraft mentions a tradition of the Iowas that "Where they lived, when all in one tribe, was on an island, or at least across a large water, towards the east or sunrise. They crossed this water by skin canoes and swimming. How long they were in crossing, or whether the water was salt or fresh they do not know." The parties from whom Schoolcraft obtained the above information remark further that, "The Great Lakes east and northeast, perhaps Baffin's Bay also, and the Mississippi river, are the only important geographical lineaments which appear to be referred to in their traditions; and hence their general movements in emigrating have been west or southwest." "This," says Schoolcraft, "concurs with the Winnebago traditions." The same writer remarks as follows in regard to the Hochungaras, the name applied by the Winnebagoes to themselves:

"The name of Puants, as the cognomen for an Indian tribe, first appears in the French missionary authors, in 1669. The people on whom they bestowed it, lived on Green Bay of Wisconsin, and the bay itself was called after the tribe. By the Algonquins they were called Wee-ni-bee-gog, (plu. animate) a term which has long been anglicized under the form Winnebagoes, (plu.). The original is founded on two Algonquin words, namely, *Weenud*, turbid, or foul, and *nibeeg*, the plural form for water. The same radicals are employed in the terms Winnipeg, and Winnepeg—names for northern lakes, in which the meaning is simply turbid water. It is found that both these lakes have a stratum

of whitish muddy clay at their bottoms, which is disturbed by high winds, giving the waters a whitish hue, and imparting more or less turbidity. The termination in *win* in the word Winnebago, stands in the place of the accusative, and renders the term personal.

By the tribe itself they are called Hochungara, which is said to mean Trout nation, and sometimes Horoji, or Fish-eaters. \* \* \* \* \* Their own traditions and the accounts we have gathered from some of the tribes on the Missouri denote them to be the ancestors of the Iowas, Missouries, Otoes and Omahaws."

The tradition given above from Gallatin also brings the Winnebagoes and other tribes from the north. Judging by the early historical position of the Winnebagoes, this must refer to the north side of the lakes.

All the data therefore appear to point to the conclusion that the Winnebagoes, at least, came from some place north of the lakes, apparently north of Lake Superior. Possibly the course of migration was around the west end of the lake, as was probably the course of some of the western branches of the family; but it is more in accordance with the traditions to suppose they came around the eastern end, crossing St. Mary's river between Lake Superior and Lake Huron. They also indicate that the home of this people had been the shores of Hudson's Bay or Lake Winnipeg. The supposition that their traditions referred to such a distant point as Baffin's Bay is wholly improbable. The most likely and most consistent supposition is that above stated, to wit: that their traditions refer to a former residence on the shores of Hudson's Bay or Lake Winnipeg; that, being pressed by foes behind, or because of increase in number they were forced to seek another abode, and turned their faces southward, and when they reached the head of Lake Huron, turned westward, passed over St. Mary's river and entered Wisconsin. Possibly the Catawbas were in advance and instead of passing onward into Wisconsin, crossed the strait into the lower peninsula of Michigan and proceeded thence southward; while the Tuteloes followed by the Winnebagoes, passed on into Wisconsin; and after a residence here for some time, followed the wake of the Catawbas to the southeast. Other divisions of the family, as the Dacotas, etc., from which the western tribes have been developed, probably moved southward around the western end of Lake Superior, spreading westward more and more toward the plains. This, as we shall see, is exactly paralleled by the movement of the Blackfeet and Cheyennes of the Algonquian family. From the Winnebago group were developed the southern and southwestern tribes, which probably moved southward when the pressure by the Algonquian tribes became severe, as it is now well recognized that the Siouan tribes south of Lake Superior were pressed toward the west and south by the influx of the Chippewas and other Algonquians from the northeast along the same route by which they had entered this region.

There appears to be no other foundation for the opinion advanced by Catlin that the Mandans once lived on the Ohio, than their somewhat advanced culture, the character of their dwellings, and the fact that they were agriculturists. This opinion probably arose in some way out of a supposed connection between them and the builders of the mounds of Ohio. It is more probable they were people formerly known in north-western Wisconsin as the "Ground-House Indians," of whom we have but a dim, though seemingly strictly reliable tradition. They were probably driven southward as far as the mouth of the Missouri river, where they began the cultivation of maize, then, like other cognate tribes, moved westward up the Missouri river.

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## NATIVE AMERICAN STRINGED MUSICAL INSTRUMENTS.

BY DANIEL G. BRINTON, M. D.

Musical instruments are of three classes, the first and earliest being where the sound is produced by percussion, as a drum or gong; the second includes wind-instruments, as flutes and conches; and the third and highest embraces the various forms of stringed instruments, where a vibrating cord develops the musical note.

It is generally stated that the American Indians at the time of the discovery did not use anywhere on the continent a stringed instrument. I have found, however, four examples which seem to controvert this, and I give them in the hope that readers of the *THE ANTIQUARIAN* will be able to add to their number.

The first is the *Quijongo* of Central America. This is a monochord, made by fastening a wooden bow with a stretched cord, over the mouth of a gourd or jar which serves as a resonator. The bow is usually a hollow reed about five feet long, and the resonator is attached at one-third the distance from one end. The string is then bent down and fastened to the mouth of the jar. The notes are produced by striking the two sections of the string with a light stick, and at the same time the opening of the jar is more or less closed by the palm of the hand, thus producing a variety in the notes.

I have given a cut of this instrument in the introduction to the *Comedy Ballet of Gueguence*, p. xxxvi (Philadelphia,



1883). Professor J. F. Ferraz, in his work, *Nahuatlismos de Costa Rica*, p. 106, says the name is from the Nahuatl or Aztec language, but its exact derivation is unknown.

The Apache Indians in some of their ceremonies made use of a small stringed instrument, of one cord, known as the "Apache fiddle." Several specimens are now in the museum at the University of Pennsylvania. The resonator is a hollow reed about a foot in length, over which is stretched a strand composed of six or eight horse-hairs. The strand is at one end, wrapped around a movable cross-bar, which allows it to be tightened at will. The cord is sounded by means of a bow with a horse-hair string. There is some doubt whether this is a genuine aboriginal invention. The specimens were obtained by Captains Bourke and McCauley of the United States army. The former does not refer to it in his "Medicine Men of the Apaches."

The third example is mentioned by James Adair in his *History of the American Indians*, p. 175. He relates that in 1746 he was among the "Mississippi-Natchee" Indians, and witnessed a performance "on one of their old sacred musical instruments." He described it as "about five feet long and a foot wide on the head part of the board, with eight strings made out of the sinews of a large buffalo." The player "held the instrument between his feet, and along side of his chin, took one end of the bow, while a lusty fellow held the other. By sweating labor they scraped out such harsh sounds as might have been sufficient to drive out the devil, if he lay in the house."

The fourth is a specimen in the Metropolitan Museum, New York. It is a reed about five feet long, with a jar fastened at the middle point, above which is a bridge. To this are attached four strings of different lengths. This is marked as from the Upper Purus River, Brazil, "Apurman Indians." No such tribe and no such instrument are mentioned by Martins, Markham, Ehrenreich, Von den Steiner or Polak, so I can add nothing to the information on the label.

It is possible that in all these cases the instruments were borrowed with modifications from the whites or negroes; but there is sufficient probability that they were aboriginal American inventions to make their further study desirable.

The stringed instrument sometimes found in Central America, made by stretching cords over the concave carapace of an armadillo or turtle, must be modern, as it has no native name in either Maya or Nahuatl; as is undoubtedly the *Yakatat*, or native fiddle of Alaska.

NAMES AND STATUES OF THE AMERRIQUE  
PEOPLE.

BY J. CRAWFORD, A. B.

The following facts are worthy of note in reference to the Amerrique people and the correct form in *Idioma Castellano* as they pronounce their name and the name of the mountain range on the east side of which they live. Amerrique in the Department of Chontalis in Nicaragua.

In "Science," Vol. XXI, No. 532, in Current notes on anthropology XXV, in referring to the orthography of the above in Spanish it is stated that M. Désiré Pector has however shown that the correct form is "Amerrisque."

M. Pector also states in his "Aperçu des principales communications relatives à la Linguistique, Faites au Congrès International des Americanists, Paris, 1890." Fol. 15. M. Désiré Pector (de Paris) contrairement aux allégations de M. J. Marcou démontre que la localité en question du Nicaragua ne s'appelle pas Amérique ni Amerique, mais bien Amerisque. Il cite quelques noms de l'Amérique Centrale du suffixe-isque, dont M. Marcou nie l'existence."

As late as 1886 there were but two properly educated and reliable persons in Nicaragua who were not only familiar with the *Idioma Castellano* but were ethnological investigators, who had for years every necessary opportunity to investigate thoroughly, and determine reliably the Spanish form for correctly spelling the name of that people as they pronounced their name, and the name of that range of mountains; on the eastern foothills of which they reside, or roam. These persons are the late Thomas Belt, author of the very interesting book "The Naturalist in Nicaragua," and the Hon. José Dolores Rodríguez, now residing at Managua, Nicaragua. These two men resided for about four years near the southern extremity of the Amerrique mountains in Nicaragua, and had some of the Amerrique people in their employ, conversing with them daily from the year 1866 to 1870.

The Hon. José Dolores Rodríguez was also the senator from the Department of Chontalis, representing that part of Nicaragua in her National Congress for many years up to 1890. The spelling in Spanish by these writers, of the name of the people and mountains above is invariably

*Amerrique*: and to be certain on this point I submitted this paper to Mr. Rodriguez, who endorsed my statements above made. During the four years that Mr. Belt and Mr. Rodriguez lived near the Amerrique mountains that part of Nicaragua was very difficult of access, and was considered by most of the people living in Nicaragua to be beyond civilization, and that opinion and condition existed until about the year 1890.

But very few persons ever visited that part of Nicaragua, and those who did were miners of very limited education; hence but little was ever known of that territory, or of the names of the Cerros mountains or of the people occupying it.

Previous to 1890 the few visitors to that section of country invariably engaged the thoroughly subjugated Chontalis Indians as guides or "Mozos," servants, who were indifferent to the names of Cerros or of peoples, and pronounced those names in the manner they supposed would best suit the wishes of their patrons, i.e., the persons who had employed them. The Chontalis Indians were then all *Mozos*, slaves in humble subjection to the Latin-Americans living on haciendas or cattle-estates from which they dared not absent themselves without permission from their patrons or employers; consequently they but seldom met or communicated with the Amerrique people to about the year 1870.

The latter people were all independent and free, and had up to this date worked in the mines for themselves in their own district or wandered in the forests at will, far to the east of the most easterly of the haciendas.

From May to September, 1888, the writer was engaged in making natural history explorations for the government of Nicaragua in the eastern part of the district of La Libertad, in the Department of Chontalis, and was, at times, among the ridges composing the Amerrique range of mountains. He engaged as guides four Amerrique people, two old men and their wives, to accompany him in that part of country unoccupied by civilization, the eastern mountain ridges and the mineral district eastward therefrom. These Indian guides were treated well, receiving presents of tobacco, etc., until their usual reserve and silence was broken, and they were influenced to become at times sociable and communicative. Then in the early evening, after a hearty meal and being comfortably settled under our hastily erected leaf-roofed shed, they related to the writer legends and myths about or of their ancestors. During these relations they became animated and sometimes greatly excited, especially when telling of the deeds of some great com-

mander or leader of their people, who were to return and lead them on to conquest and to their former supremacy in Nicaragua. Then when excited the narrators would sound out the *rique* part of their name, Amerrique, with impressive clearness. At that date, 1888, when these four guides were with the writer, for about a month, he had no knowledge of the discussions going on as to the derivation of the name, America: nor of the difference of opinion as to the correct spelling in Spanish of the name of the Amerrique people and range of mountains. Nor had he then read Mr. Thomas Belt's interesting work above mentioned. In the writer's notes, made daily at that time, he sees that he sometimes wrote the name Amerrique or Amerikue; this because of his haste to follow in writing what the Indians were relating as translated to him.

It is also to be noted here, that in Nicaragua the double letter *rr* is not, by the majority of the people pronounced with that rolled out buzz as would a native Castilian.

In March, 1893, when at Grenada, Nicaragua, an English civil engineer, Mr. W. P. Collins, visited me. He had just arrived from completing a preliminary survey for a projected railroad from the town of Rama, at the head of steamship navigation on the Rio Escandido or Bluefields river, along up the valley of the Rio Mico and across the mountains to Lake Nicaragua. He had necessarily explored on both sides of the Rio Mico, from the foot of the Amerrique mountains eastwardly to where the Rios Mico, Siqua and Rama unite, near the town of Rama, and form the Rio Escandido. He kindly gave to me a pen sketch or map, exhibiting the route that he had selected for the proposed railroad to the Amerrique mountains, and he spelled the name as above on his map.<sup>1</sup> This is the only reliable map of that part of Nicaragua known to the writer. It shows a possible railroad route from the Amerrique mountains to the town of Rama, at the head of steamship navigation, on the Escandido river, of only a grade of two per cent as the highest, and it also shows how easy a route by land as well as down the river Mico in Canoes the Amerriques had to the Caribbean sea coast at Bluefields.

There is no doubt but that a few intelligent explorers at various dates since 1875, in search of fossils, relics of antiquity, etc., have once or twice visited the mineral district of La Libertad, on the northeastern border of which live the

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(1) This map was sent to and is now in possession of Prof. Jules Marcou, Harvard University, Cambridge, Mass., by the writer.

Amerrique people. These explorers necessarily employed guides or "mozos" from among the Chontalis Indians at some hacienda near the eastern margin of Lake Nicaragua, and depended on their ignorant and often stupid guides for the names of Cerros and people that lived distant from them forty-five to sixty-five miles.

These archaeological investigators visited, most probably, the towns of Aco-yapa, La Libertad, San Pedro de Lobago, and also the "Chontalis Mines," where Belt and Rodriguez had lived for several years, and they probably remained a few days at each one of the small villages above named, exploring the near-by locality, and enthusiastically writing in their field-notes or books such information about the cerros and people as their guides, or others equally ignorant and unreliable, pronounced them. It is very improbable that any of these investigators ever went as far eastward in that section of country as three leagues from La Libertad, because of the difficulty of access; that region previous to 1889 being a pathless wilderness, into which even the "hule-ros," collectors of rubber, hesitated to go without having first made friends among the Amerriques, whom they used as guides.

These archaeological investigators were therefore not circumstanced so as to acquire correctly the aboriginal names as pronounced by the few remaining Amerrique people.

The Amerriques live on the north side of the river Mico, and to the northward beyond the river Siquia, and they navigate both rivers down to the Caribbean sea at Bluefields.

In the country of the Amerriques are also to be found in several small creeks, small areas or patches of placer deposits, rich in gold.

The Amerrique people and Mosquito Indians are on friendly terms, and often enter each the territory of the other. The latter hold in high esteem the former, and the traditions preserved by each declare that this friendship existed between their ancestors. In fact, about a century ago the Mosquito Indians passed unmolested through the territory occupied by the Amerriques and attacked the Spaniards at Juigalpa, capital of the Department of Chontalis. The Amerriques are an active people, generally commanding in appearance and manners; are usually tall, from five feet eight inches, to six feet two inches. Their general type is impressively Polynesian or Mongoloid, and their language is different from either the Chontalis or the Mosquitos or Moskos Indians. Their ancestors carved glyphs and hieroglyphics on the face of the rocks, on the margin of

the Rios Siquia and Mico rivers, which I hope to have photographed a few months hence, when the floods have subsided, or whenever the present bloody revolutions here cease, and political quiet is restored. They are very few in numbers, and have, since the year 1866, decreased very rapidly, so have also the Mosquitos, although they are free to roam through a well watered wilderness, which is apparently healthful, and abounds in delicious wild fruits, wild game—such as wild hogs, turkeys, pheasants, deer and other animals. The Chontalis Indians who are in servitude appear to increase in numbers. I have in this paper referred to the Amerriques as a "people," not calling them Indians because of their peculiar though clearly defined Micronesian type, and because in 1891 I examined on the Island of Momotombito, in Lake Managua near the Pacific ocean coast of Nicaragua, a number of stone images portraying a type of men represented in Nicaragua only by these Amerrique people. The images were sculptured with chipped flint tools, and are evidently of great antiquity. This is indicated by the geological formations in which they were discovered, and by crystals of quartz which had formed in pores and in small cavities in the face of the parts that had been chipped or worked with flint or stone implements; other conditions also existing where these images were discovered inclined me to the belief that the ancestors of the artists who sculptured these stone statues into portraitures of a Micronesian type of people had arrived on the west coast of Nicaragua from Polynesia, crossing the Pacific ocean over a nearly connected chain of islands, or over a connected land route which probably existed between Polynesia and Nicaragua, as it also existed probably between Chili and Polynesia during the maximum elevation of land which immediately preceded the long glaciation that existed in Nicaragua during the glacial epoch.

The writer believes that the type of man represented by the above stone images is represented in Nicaragua by these Amerrique people and that the evidence establishes beyond doubt that Amerrique is the correct manner of spelling of the name of the people and mountains under discussion.

## ARROW-HEADS AND BANNER-STONES.

BY STEPHEN D. PEET.

The geographical distribution of stone relics is illustrated by Mr. A. E. Douglas, in the American Museum of Natural History in New York. Mr. Douglas has been years gathering this collection and has relics from all portions of North and South America, though by far the largest number are from the Mississippi Valley, especially that part which lies between the great lakes and the Ohio river. His collection is very rich in arrow-heads, spear-heads, scrapers, bunts and knives, especially in "chipped flint" relics, which represent the "Neolithic" age, and a special "epoch" in the age.

Mr. Douglas has prepared a table on which he has spent considerable work, which shows the states from which these various relics were gathered, and which is very suggestive as to the employment and mode of life of the Indian tribes formerly in those states.

There are many relics which would be used in woodcraft, such as celts, 721; grooved axes, 419; chisels, 148; gouges and adzes, 85; a few which would be used for agricultural purposes, such as spades, 45; picks and hoes, 189; a few also used in domestic life, such as pestles, 145; mortars, 131; spindle whorls, 209; fleshers, 35; anvils and cup stones, 13; sinkers and pendants, 270; vessels of pottery, 137; paint cups, 7, and an unusual number used for ceremonial or personal decorations, such as "banner stones," 209; pipes, 375; stone "gorgets," 360; "bar amulets," 38; "bird amulets," 70; beads of bone, 30; beads of shell, 140; beads of stone, 119; beads of glass, 25; other ornaments of stone, 140; of shell, 21; of gold of U. S. Colombia, 154; "Quippus" from Peru, 12; stamps and seals from Mexico, 52; flutes and whistles from the same region, 4; copper objects, 78; objects in hematite and iron ore, 1079; (mainly from Missouri, Ohio and West Virginia); also a few used for amusement, such as quoits, 10; "chunky stones" or discoidals, 103.

It is also very suggestive as to the social condition and tribal customs of the Mound-builders, especially those located in the valley of the Ohio River.

We learn from it that there were at least two modes of life in the Mississippi valley; one of which was represented by the chipped flint relics; the other by the carved stone specimens. Of the first class, arrow-heads and spear heads, being the most numerous; and of the second, the banner stones, being the most expressive. Now, it is to these two classes of relics, that we shall call attention, with the thought that the first class represent

the hunter state, the second represents the agricultural, and the third the sedentary condition, and this typical collection shows where these conditions prevailed in pre-historic times.

We generally think the Indians were all alike, and especially those who dwelt in this particular belt of latitude. Some hold there is no perceptible difference in the relics of the Mound-builders of Ohio, and those of the wild hunter Indians, but the table shows the contrary, for from Ohio we have 100 Banner-stones out of 209, 213 stone gorgets out of 360, 22 bar amulets out of 38, 35 bird amulets out of 70, but only 95 celts out of 721, 473 arrow-heads out of 8396, only 65 spear-heads out of 2172; 34 drills out of 327, 17 scrapers out of 1061. While on the other hand we have from Missouri alone, 258 grooved axes out of 419, 156 picks out of 184, 4590 arrow-heads out of 8396, 1590 spear-heads out of 2172, 476 scrapers out of 636, 753 bunts out of 853, 67 cores out of 88, 428 hematites out of 1097. The

The arrow-heads are almost universally distributed as the following list will show: From New York 963, Virginia 367, W. Virginia 372, Kentucky 140, Ohio 473, Georgia 103, Mississippi 185, Oregon 374, Missouri 4590.

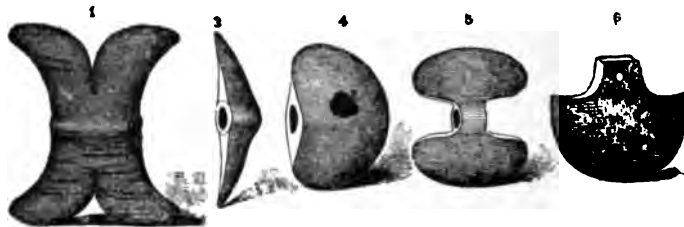
The character of the material and the distribution of the relics shows to us that in the stone age the prairies of the west and the forests of New York were really the hunting grounds, but the region along the Ohio river was the home of the village Indians and mound-builders, for we get a picture of one phase of prehistoric society and one particular region which we can get in no other way. It is in fact a Mosaic which enables us to read the condition of this people who were passing out of memory into tradition.

The catalogue of the collection is then a good exponent of the "stone age" as it was in these particular districts—and is valuable on that account. Other collections may perhaps illustrate the same age as it appears in other districts, as for instance, in the Gulf states or the cliff-dwellers' habitat, but probably in these regions it would be a "stone age" with less stone and more pottery, and for that reason the completeness of the collection of the limited district makes it unique.

Mr. Douglass has also accomplished another result. He has gathered a large number of animal-shaped pipes and banner stones, and in his pamphlet has given a nomenclature which is very valuable and instructive. The banner stones, amulets, and gorgets are the most interesting specimens. These are sometimes called ceremonial axes, bird ornaments, wands, totems and maces. The name banner stone is suggested by the capability of being mounted on a staff and borne before some dignitary as an indication of rank, and corresponds with the shape and character of the relic, as each one has a perforation, which extends through the entire breadth of the relic like a wooden



ax, but the material shows that they could not have been used for weapons or implements. There is one thing that is remarkable about banner stones, it is that a large majority of the relics of this kind including bird amulets, stone gorgets, are found in the state of Ohio, and in the southern States, where there are earth works or covered ways through which it is supposed processions formerly passed on their way to sacrifices or religious feasts. It is a very little thing to hang a theory upon, and yet, when we



BANNER STONES AND BADGES.

compare the relics along with the earth-works, we find the correlation so strong that we are led to adopt it and to contrast the people who built the earth-works of Ohio with every other tribe or nation in the Mississippi Valley, though, if we take the copper relics, which are found in the Gulf states, we may conclude that there were people there, who had reached the "copper age" though retaining the practices of the "stone age" as these copper relics represent persons who carry badges upon the heads which resemble those found in Ohio. See Plates.

The shapes of the banner stones vary largely and are grouped into the following subdivisions: [1] Circular, see No. 4, where the two flanges complete the circle of the whole object; [2] pick, see No. 3, a rounded bar either straight or curved, ends tapering to a point; [3] butterfly, see No. 7 where the ends are broad, but cut away so as to resemble a short-bodied insect, especially a butterfly; [4] a bird wing, No. 1, where the ridge is short and the flanges extend to considerable length making a double crescent; [5] a triangular bar, where the perforation traverses the length of the bar, whose vertical section forms a broad-based triangle; [6] conical, where the flanges diminish from one end to the other; [7] rectangular, where the sides and ends are parallel or square; [8] *single arm*, having but one drooping arm and an oval instead of a circular perforation; — this is called "an arrow straightener"; [9] the crescent, where there are two drooping arms, at the end of which is sometimes a knob or ring-like projection. No. 9 and the double-bladed axe, Nos. 5 and 8.

The class termed gorget has a variety of names, as follows: Pierced tablet, "bow-string guage," "badge," "pendant," their

probable use giving them the names. They are called gorgets because they are supposed to have been worn upon the neck or dress, and this name was adopted by experts in Indian trade when similar objects in metal were traded to the various tribes. The gorget was a plate of stone, generally stratified slate, the surface highly polished, perforations being made with a conical and not cylindrical drill. They have various shapes. The spade-shaped gorget is a flat plate, semicircular in shape, with a tang about two-thirds its breadth extending from the upper edge with one or two perforations through the tang. It differs from the gorgets generally, in having the semicircular blade brought to a moderately sharp edge. There are varieties in the shape of gorgets, viz: leaf-shaped, spear-shaped, square, ridged, expanded center, ovate, and all are perforated and may be properly called tablets.



BIRD AMULET.

The bird amulet has also a number of different names, viz: knife-handle, corn-shucker, saddle-stone, brooding bird, though the latter is the more appropriate name as the design is, evidently, to represent a bird of some kind, either the duck, pigeon or prairie hen. More complete specimens have a flat base with the head and tail of the bird rising at an angle from opposite ends. Below the head and tail, at the end of a bar is a diagonal perforation which seems to have been designed for the cord by which the amulet could be fastened around the head and worn as an ornament.

Among the seventy bird-amulets in this collection are seven of an expanded oval base, two with projecting eyes or ears, one whose head is that of a turtle. There are certain bird-amulets in the collection at Toronto, some of them very rude, but all have the bird-shape and the diagonal perforation.

The bar-amulet is not so common, but should be classed with the bird-amulet, though it has no characteristic of a bird or animal but has the particular perforations and was probably used for the same purpose.

The boat-shaped implement is another relic which deserves to be mentioned. It resembles a boat in so many ways that the

name is sufficient to identify it. These relics are from two to seven inches in length, hollowed out more or less deeply and rounded to a sort of keel below, and most of them have perforations running through the bottom of the boat at either end.

These relics are distributed throughout the Mississippi Valley and are very rare. In this collection there are : from Ohio, four; from Georgia, three; Tennessee, three; North Carolina, two; Kentucky, one; Mississippi, one; Arkansas, one.



FLESHERS AND MACES

Carved-pipes are generally very expensive when purchased, and are difficult to find when the explorer is in the field. Most of the pipes in this collection are from New York state and may have been Iroquois, some of them post-Columbian. Others are from Ohio, Tennessee, Kentucky, West Virginia and Missouri. Many of these may be called mound-builders' pipes. They are classified according to their shapes into the following specimens: Sculptured pipes bearing human head, face and form, 30; bird-shaped, 23; animal-shaped, 39; platform, bowl set on straight platforms, 12; shield shaped, 6; tubular, 22; trumpet shaped, 13; solid bowl, aperture for stem, 46; double bowl, 2; bowl at right

angle to stem, 103; obtuse angle, 39. Many specimens of fine work are shown by the pipes, though some of them may have been of post-Columbian origin, as the Indians acquired great skill in imitating the pipes of pre-historic times.

There is one other class of relics about which there is much uncertainty. They are called tubes or perforated stones, though their use is unknown. There are several subdivisions of this class, one is called the "hour glass," as it has two slender cones united in the center, excavated in a conical shape, another is "cylindrical." These are merely straight perforated tubes from two to twelve inches in length. Another has a "flat base," has one side slightly flattened and resembles a large bead. These tubes are supposed to have been used by medicine men for cupping or at least for extracting or sucking diseases from the bodies of the sick, though some have called them whistles, others telescopes, imagining they were used for astronomical purposes.

Many "tubes" have been found in Vermont. These have been described by Prof. Perkins, of Burlington, Vt. There are many specimens in the Museum of the University of Vermont. If we consider the habits and ways of the medicine men, and especially those who practice their arts among the savages and hunter class, the best explanation of these tubes would be that which makes them equivalent to "cupping-stones," for the superstition is that every disease was an animal or insect spirit which must be exorcised or drawn out of the body by some magical art, a superstition which once prevailed in Chaldea and gave rise to the magic practiced there in the early days of history.

## THE TEMPLE OF QUEEN HATASU AT THEBES.

REV. WM. C. WINSLOW, D. D.

That Alhambra among the temples, the temple of Queen Hatasu, at Thebes, now that it is cleared and in ruinous order, affords a unique study. Dr. Naville emphasizes the fact that the shrine is unlike any other in general plan and in the details of style. There is no other Egyptian temple known to us which is built on a rising succession of platforms; and we are therefore without comparisons for our guidance in seeking to ascertain how the architect was led to the adoption of this scheme. To some extent it may have been suggested to him by the nature of the site at his disposal, by the huge steps in which the rock of the foundations descends to the plain. What was the distinctive use of each of the three platforms on which the temple was built? Our excavations have proved that the lowest platform was treated as the garden, or rather the orchard, of the temple, and that the trees planted in it were artificially watered. But the central and most extensive of the platforms, on the one side abutting against the cliffs, and on the other supported by a decorated retaining wall, seems to have been a clear space, and may perhaps be considered as corresponding to the spacious colonnaded courts preceding the sanctuaries in temples of both Pharaohs and Ptolemies. Neither have we any certainty as to the proposed use of the four unfinished chambers opening on to the colonnade on the northern side of the middle platform. Like the lateral chambers at Denderah and Edfu, they may have been intended as storerooms for the incense and sacred oils, the garments and numerous utensils necessary to performing the various rites of the complicated Egyptian ritual. Or, like the court of the altar of Harnakhis, they may have been sanctuaries dedicated to the cult of divinities more especially worshipped in other parts of Egypt. But the more plausible supposition is that they were meant to be funerary chapels for members of the queen's family.

The above may serve as examples of the many unsolved questions raised by the study of this remarkable building; and the solution of the problems is the more interesting since Deir el Bahari is the oldest of all the funerary temples in the so-called Memnonia of Thebes' archaeological center. It is the metropolis of necropolises. Mr. Percy E. Newberry truly remarks, how little really systematic work has been done, and how little is known of, perhaps, the most interesting and instructive part of Thebes--its private tombs. Up to last summer, he had spent fourteen months in exploring that city of the dead. He writes:

"During my explorations there I have catalogued and classified nearly 200 inscribed tombs, of which perhaps only eighty were previously recorded. Many of the previously unrecorded tombs contain scenes and inscriptions of great interest; and it would seem that the reason why they have until now escaped notice is that they are for the most part inhabited, and have been for years, by the *fellahin* and antiquity dealers of Gourneh. The natives have, as a rule, a great objection to their houses being inspected by Europeans, especially the inner apartments, which are generally occupied by the *harim*, and since a government permit has to be obtained for digging for antiquities, another reason has arisen for their dislike to be visited by Europeans. Not being allowed to dig in the open, they tunnel in at the back of the tombs which they inhabit, till they come upon others untouched. I have myself crawled along many tunnels thus formed (one for a distance of at least 200 yards) connecting several tombs now rifled. Doubtless there are many others that have escaped my notice. Living as I did during the late spring and early summer of last year in the village of Gourneh, Mrs. Newberry and myself did our best to cultivate the acquaintance of the natives, inviting them to visit us, and then, of course, returning their calls, with the result that, after a time, we became so friendly that even the 'inner chambers' of the tombs in which they resided were thrown open to us."

During his Theban labors he made a complete copy of the famous tomb of Rek-mara, with ladders and candles.

Again, the similarity of the architecture at Deir el Bahari to that of Greek temples is forced upon us, especially when looking on the white columns of the Anubis Shrine after coming from the Ramesseum. This impression is not only a general one, but is borne out in some detail by a comparison between the fluted columns of Hatshepsu and those of the Doric order, by a consideration of the architectural proportions of this part of the building and the relations between column and architrave. At Deir el Bahari nothing is on a gigantic scale; but it seems to me that when the Egyptians turned aside from the style which was here applied so successfully, in favor of the massive architecture of Karnak and Medinet Habu, they deviated from the path which would have led them to elegance, and preferred the majestic and the colossal.

Still more fragments of the Punt sculptures have turned up at this temple. In addition to the genuine Puntites, with aquiline features, pointed beards, and long hair, there are also represented negroes of two different shades of color—brown and black. The native huts were apparently made of wicker-work, and in front of one of them sits a big white dog with pendant ears. Another dog of the same kind, and led by a string, is being brought to the Egyptians. Birds with long bills are seen flying out of the trees from which men are gathering the incense, while the nests which they have forsaken are robbed of their eggs, either for food or for some religious observance.

Dr. Naville found a beautiful coffin of a priest of Amon. It is remarkable that it does not bear the same name inside or outside. Inside the deceased is called *Buan*. He was a man of high rank with numerous titles, among which are those of Head of the Treasury and Head of the Granaries, showing that his

position was one of consideration power. But on the outside he is called simply *Menthuhotep*, a name probably assumed as being that of the king under whose reign he had spent the greater part of his life, or to whom he was most indebted for the favours which he had received. I take it that the life of *Buan-Menthuhotep* was contemporary with the end of the XIth Dynasty and the beginning of the XIIth. His coffin, with all its paraphernalia, is now at Ghizeh. In artistic beauty and in preservation it is certainly one of the finest to be found in any museum.

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### EGYPTOLOGICAL NOTES.

BY WILLIAM C. WINSLOW, LL. D.

In the next ANTIQUARIAN we will notice the Fundso' Archaeological Report for 1895 6, and Prof. Petrie's Naquada and Bollas, which he has just sent to me. Just now is a plethora of scholarly books.

We turn to a topic dryer than a mummy—Egyptian grammar. Prof. Adolph Erman's new, or revised grammar, as translated by Prof. James H. Breasted, is carefully reviewed by a competent hand, Mr. Griffith, of the Fund, who considers that to Erman belongs the honor of having first pointed out the existence of grammar in the inscriptions and papyrus; and any one who will take the trouble to compare the old translation may see that the authors arrived at their versions by a process of guess work—often, indeed, wonderfully successful—guided merely by the juxtaposition of words of known meaning, and without any inkling of grammar. That such guesswork was often wrong, and seldom carried conviction, even to the mind of the guesser, is likewise apparent. We are now beginning to work by rule and distinguish between what we know to be correct and what is hopelessly conjectural, whereas formerly the preponderance of uncertainty was so enormous that it was hardly worth while to aim at such distinctions. If this statement should be considered somewhat exaggerated in regard to certain of the more transparent texts, it is by no means over-drawn with regard to those of the earlier periods. Even to-day both Lexicon and Grammar, especially the former, must be much further elaborated before we can read a text through without frequent stumbling, and yet our present mastery of the hieroglyphic and hieratic records is something totally different from the conjectural decipherment of 1874. Dr. Griffith considers, too, that "the

rk is a very complete handbook for students, the passages translation being excellently chosen."

The accounts and measures of ancient Egypt furnish no an study. Dr. Spiegelberg's two large volumes on that object deal with papyri in the *Bibliothèque Nationale*, which chiefly date from Seti I. The opening papyrus treats of the supply of wild fowl for the royal preserves, accounts of flour for the royal boccas, of wood for ships, of leather for furnishings, etc., etc.

Dr. Sethe (a name suggestive of the XIXth Dynasty) comes out with "Studies in Early Egyptian History," in which throws much light on the geneology of the successors of Ames III. Scholastic Germany seems rife with teachers, and especially students and books in Egyptology.

This winter's campaign will see Dr. Petrie at Minieh in the syûm, the transcriptions of scenes at the temple of Hatasu, with some closing touches of restoration, and the further survey work — enough to fill volumes, doubtless, with valuable results.

The exhibition in London at the Buckingham House of the papyri and objects found by the Fund, last season, has been very attractive to many visitors. The greater part of the papyri are domestic and social documents, such as contracts, letters, accounts, etc., of various periods. Among the most interesting of them are an Imperial rescript of some emperor of the third century, a private letter of the Emperor Hadrian's, a number of visiting cards, and a series of banking accounts in Latin. On a table by themselves are arranged a selection of literary papyri which will appeal especially to the classical scholar. Here may be seen the most archaic Greek papyrus known, consisting of a fragment of a lost Greek tragedy. It is declared to be not later than 250 B. C., and may be even older. Of Homer there are many fragments. One which is not later than the second century B. C., gives several variations from the received text, and it is thought to represent the author as he was before the revision by the Alexandrian grammarians. This fragment also contains a line that is not found in Homer's works as we have them, but is quoted by Plutarch from them. Another important papyrus contains over even hundred lines from Books xiii. and xiv. of the Iliad. It is not quite so long as the Harris Papyrus in the British Museum, but is about three centuries earlier. There are also a number of fragments of Demosthenes and other authors, known and unknown. One of the most curious exhibits is a portrait on papyrus, from Bacchias; it is not in very good preservation, but the colors of two paintings on wood of the Graeco-Egyptian period, which are shown beside it, are remarkably bright. On the table in the middle of the room are arranged a number of interesting domestic objects in wood, found in houses at Karanis and Bacchias; such as



locks, combs, a pair of scales, together with dice (one loaded), an alabaster thimble, glass vessels, etc. Round the room are elaborate reproductions of drawings and hieroglyphics of the XVIIIth Dynasty, found in the temple of Der-el-Bahari. There are also several thousand silver coins from the Roman mint at Alexandria, found at Kom-el-Qatl, and belonging to all reigns from Claudius to Aurelius.

#### THE EGYPTIAN RESEARCH ACCOUNT.

This is the name of the society under which Professor Petrie has done a work unsurpassed for brilliancy and accuracy in the entire history of archæological explorations. In a word, he is the society. He sends to me his fresh volume, "*Naquada and Ballas*." Of course his discovery at the Ramesseum of the tablet touching "the people of Israel," and Merenptah, "the Pharaoh of the Exodus," was the crown jewel in last season's labors. As an inscription it heads the list of valuable Egyptian tablets. But I am not now rehearsing these matters. As Dr. Cooke says, "fresh funds are needed for the really important and pressing work;" and in the report Dr. Petrie states that his receipts now stand £70 less than his expenditures, and leave, of course, the publication of his work at the Ramesseum entirely unprovided for. "The management of the Research Account continues to be free of cost, as I give the minor printing, advertising, etc., as a contribution toward it"—he says. His total receipts from November 20, 1895, to November 6, 1896, have been £626—17s—6d. His report of but eleven pages gives the name of and amount from each subscriber, and an audited balance sheet.

*Naquada and Ballas* is a fine quarto of 86 plates, and is, of course, sent to all subscribers of £1 upwards. The thousands of illustrations vividly represent stone vessels and vases; pottery, black-topped, polished red, fancy forms, wavy-handled, black incised, decorated, etc.; carvings, palettes, flints, stone and copper implements, ivory carvings and "objects;" and, of course, beads, scarabs, seals, measures, etc.

Museums find in Dr. Petrie an inexhaustible mine, he having removed 180 cases of "objects" from Koptos, 300 from Naquada, and 160 from Thebes; Philadelphia giving £100, Chicago £51, and thus securing a lion's share from so leonine a yield. Prof. Petrie, with advice from the donors, distributes from London the spoils direct to their destination.

The late Amelia B. Edwards, a warm supporter of Petrie, founded by will "The Edwards' Chair of Egyptology," at University College, Gower Street, London, W. C., having in mind for the chair, Prof. W. M. Flinders Petrie, who will rejoice, I am sure, to receive aid for his great work. To all my friends, or who care for the story of man in the far past, I earnestly appeal to as-

ist this uniquely valuable cause. I will receive subscriptions, accept for them, acknowledge them and promptly forward them to him properly audited. I regret that my little subscription to him, last year, could not have been ₤300 instead of £3. Address Rev. W. C. Winslow, 525 Beacon St., Boston.

WM C. WINSLOW.

Boston, Feb. 2, 1897.

## BIBLIOGRAPHIC AND ETHNOGRAPHIC NOTES.

BY ALBERT S. GATSCHET, WASHINGTON, D. C.

*Assyrian Clay Tablets.*—Since 1892, when the original text and translations of the clay tablets of Tell-el-Amarna were first published by the press, the insight into their importance for ancient history has steadily increased and recently a writer has even declared them the most valuable documents for oriental historiography of the pre-Islamic period. Shortly after the discovery of the tablets the largest number were purchased by the Museum of Berlin and published by it in 1892; there were 160 tablets, many of them in a fragmentary condition, but the majority were in a perfect state of preservation. The British Museum obtained 82 tablets, and the trustees of that institution published them the same year as above. The Boulaq Museum at Gizeh, owned by the Egyptian government, has 60 of these valuable relics, and a few only came into the possession of private individuals. Most of our readers are familiar with the fact that these tablets are written in Assyrian, and contain the diplomatic correspondence between Egyptian subjects in Phoenicia, Palestine and the east, with two kings of Egypt of the 15th century, B. C., Amenophis the Third (the last pharaoh of the XVIII dynasty), and Amenophis the Fourth, called the "heretic," because he introduced a sort of solar monotheism, after a Babylonian model. Not only was this royal act a great shock to the extremely conservative Egyptian mind, but the transfer of the seat of government from Thebes to a site near the present Tell-el-Amarna must have proved still more offensive. In the ruins of this ephemeral capital, about 150 miles south of Cairo, the clay tablets were found. Their text has lately been re-edited in a thoroughly revised form by Prof. Hugo Winkler, translated into German and English, and published by Reuther and Reichard, Berlin, of whose "Keilinschriftliche Bibliothek" it forms Vol. fifth. Considering the manifold difficulties which still surround the full understanding of these messages, the editor confesses that his edition can only be regarded as a transi-

tory essay and a forecast of something better to come. A new comparative study of all the originals was needed to clear up doubtful passages and to obtain the correct readings. Many texts are worded in an orthography partially faulty or fanciful, or were impressed into the soft clay with more imperfect tools than the regulation "chisel," while others have suffered by breaks at the edges. There are many words and phrases not yet fully understood in spite of the help afforded to their study by the other monuments we have in the Assyrian dialect, which shows the most archaic forms of all the dialects of the Semitic stock. Winckler has transcribed the texts by Roman letters. He separated all the syllables expressed by *one* cuneiform group-sign by hyphens, and every word commencing a new line is marked by a different number in the Assyrian text as well as in the translation. Long vowels are distinguished as such by the macron. The authors of these messages placed their names, titles and signatures *at the head* of the missive, like the Greeks and Romans, and not at the end, as Europeans have done since the beginning of the middle ages. The usual modes of allocution to kings and princes were set formulas of an official character, and appear to us rather servile, as the "dust of thy feet," "seven and seven times I fall down before you." The central power in Egypt must have been at that time weak and irresolute, for many of the tablets report seditions, open revolts and intrigues against the king and his governors in the provinces, robberies and devastations perpetrated by the revolting chiefs. Other tablets enumerate at length the tributes destined or sent to Khu-en-aten, "Glory of the sun-disk," the royal name assumed by Amenophis IV; the trousseaux and escorts of princesses and women of noble birth at their marriage to foreign potentates, are described at length. Many towns of Phœnicia are mentioned, but in a way rather puzzling to Bible readers; thus Beirut is called Biruna, Birutu, Tyrus: Sur-ri, Sidon: Zim-rida, Canaan: Kina-ahna and Kinahi, Gaza: Hazati, Azzati, Jaffa (Joppe): Yapu, and Memphis: Hikutba.

The locality east of the Nile, where in 1887 an Egyptian peasant woman found the first of these tablets, has since then been thoroughly ransacked, though nothing of any consequence was found. But the gain already derived from this discovery (Winckler has 296 numbers) has been of so great value to science that we may thank Providence for having set us thinking and studying about so many new facts and problems. To aid further research the editor has added

a glossary of words, covering 34 pages, and a list of proper names of persons and places of 8 pages. The other volumes of the "Keilinschriftliche Bibliothek," under the editorship of Prof. Eberhard Schrader, contain historic, administrative, commercial and poetic texts in large numbers, which will be of appreciable assistance to the students of the Tell-el-Amarna tablets, for they are worded in Assyrian also. The recent discoveries of inscriptions at Nippur, near the Persian gulf, have brought to light monuments ascertained to date from five to seven thousand years\* before our era, a fact which cannot fail to stimulate the study of cuneiform literature in an unprecedented degree.

*The German-Swiss Dictionary*, of which mention was made in the earlier issues of THE AMERICAN ANTIQUARIAN, is steadily proceeding towards completion. It is published by J. Huber, at Frauenfeld, Switzerland, in quarto size, with two columns each page, and has now reached the 29-signature of Volume fourth, comprehending part of letter *M*. The editing and contents of this dialectic collection are on a level with the best, what the science of linguistics has ever produced, the material having been brought together by over four-hundred contributors from the Swiss people. The present editors are A. Bachmann, R. Schoch, and H. Bruppacher; two of the more eminent helpmates to this national enterprise, the Professors Fredrich Staub and Dr. Ludwig Tobler of Zürich are no longer among the living. The start to this patriotic work was given in 1862 by the "Society of Antiquaries," of Zürich, and though the publication is not seconded financially by the Swiss public and the learned classes, librarians, etc., of other nations, as much as it ought to be, the Swiss federal authorities are favoring its issuance by yearly contributions. We are happy to state that this "Schweizerische Idiotikon" is printed in Roman type, and not in the so-called Gothic or Old German character, which should have been discarded long ago by all publishers of scientific books composed in German. It is published in numbers, (the last one being the thirty-third); these numbers contain about 150 pages each and are appearing with regularity.

*Dr. Gustav Bruhl* of Cincinnati, well known in scientific circles through his ethnographic and archæological researches and publications, has for many years back devoted his leisure time to traveling all over the globe. Many of the sights and ethnic peculiarities, customs, festivities, etc., witnessed by him were published in German newspapers of this country from time to time. Frequently urged by his friends to publish these valuable sketches in book form, and to make a solid total of them by connecting them chronologically, he followed this advice and

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\*Compare last annual report of the Archæological Institute, Boston, Mass.

has just issued with a Berlin publisher his "Zwischen Alaska und Feuerland. Bilder aus der neuen Welt" von Gustav Brühl. Verlag von A. Asher & Co., Berlin, '96, octavo, pp. 722. This comprehensive and well-written volume is dedicated to his old friend, "the song-poet at the Golden Gate," Theodor Kirchhoff, and certainly it was the gift of poetry common to both that formed the link of attraction between the two. The typographic make-up of the ponderous volume is splendid, and the lines pretty far apart, which facilitates the perusal considerably. The travels of the author begin among the marvelous and grandiose sceneries of Arizona, then wend their way to the homes of the cliff-dwellers and Zuñians and to the adobe-population of New Mexico. After a short side trip to Alaska and the Yellowstone Park we are led through the caves, alleys and mysteries of darkness contained in the Mammoth Cave of Kentucky, then to the never-to-be-forgotten cascades of Niagara, the "Thunderer," and from there to the beauties of the Thousand Islands, Canada. The description of Yucatan and its memorable ruins takes fifty of the most interesting pages of the volume; from there we sail over the Caribbean sea to Vera Cruz and view at leisure Mexico and its surroundings, the memorable historic places in Anahuac, a land as classical for Americans as Italy is to Europeans.

Brühl then takes us into the higher sierra to the southwest of the capital, Cuernavaca, Xochicalco, the "house of flowers," and from there to the country of the Zapotec Indians, in which Mitla and its ruins form the principal attraction. Guatemala, the republic and its capital, where the Indian race has been preserved in a purer state than anywhere else in America, had been visited by the author several times before and by his intimate acquaintance with that sub-tropical region he knows how to present to his readers what is of greatest interest to them. One hundred pages are devoted to it and about as much to Perú, the land of the Incas, of punas, chulpas and tambos. Lima, Cuzco and, the lake of Titicaca, with all that the traveler wants to know are described in full. A sketch of Chile, Valparaiso, Santiago (the capital), its German population and the aborigines of the mountains then follow, and the volume winds up with a view of Montevideo, Buenos Aires and Rio, after the author had doubled Cape Horn in the worst kind of weather.

*The new "Jesuit Relations."*—A novel literary undertaking, which will be a standard historical work, and of great help to documentary research for North America, is inaugurated by the secretary of the state historical society of Wisconsin, Reuben Gold Thwaites, and will appear in octavo size, under the title "*Travels and Explorations of the Jesuit missionaries in New France, 1610-1791* ; the original French, Latin and Italian texts, with English translations and notes illustrated by portraits, maps and facsimiles." Cleveland, O., Burrows Bros. Company, pub-

lishers, 1896. The first volume is out, and extends over the period from 1610-1613, comprising historic documents on Acadia, Maine, (New Brunswick, Nova Scotia), with the original language on the left, the English translation on the right hand side. The edition consists of 750 sets, all numbered, and will embrace not less than about seventy volumes. It will comprise the "letters" of Jesuit missionaries printed in the Cramoisy edition, the Quebec reissue, the Shea and O' Callaghan reprints and besides this a very considerable collection of miscellaneous papers of importance, from printed sources and from manuscripts will be added, all in chronological order and a list of the contributors is given by the editor in the "General preface." The relations of the "Cramoisy edition" begins in 1612 A. D.; the first volume as mentioned above has interesting documents dated before that year, e.g., a section from the works of Marc Lescarbot.

*The Haida language* spoken by the Indians inhabiting the Queen Charlotte Islands, opposite British Columbia, does not belong to the best explored languages of the Pacific coast. The Rev. C. Harrison, missionary among that people, has composed a grammar of their tongue, which was read before the Royal Society of Canada on May 25, 1892, and edited by Dr. Alex. F. Chamberlain, professor in Worcester, Mass., in the Society's "Transactions" in 1895; pp. 123-226. The treatise contains a prefatory note pointing to the meritorious work done by Dr. Franz Boas for the exploration of the language and ethnography of the Haida Indians, and mentions 39 living and extinct tribes or settlements of theirs. The national name is spelt Häädë. Although Harrison is not conversant with the scientific methods now in use in the study of languages, his book is profuse in lexical and syntactic examples, and the inflection of the verb is as complete as could be given. The numerals are accompanied by many "classifiers," giving the shape, length, color, etc., of the articles counted. Nasalizing appears to be a prominent feature of this island language.

*James Tait* has copied a curious rock painting of the Thompson River Indians, British Columbia, found by him near Spence's Bridge at a place near Skaitôk. The painting was on the south side of a huge boulder and commemorates the period of purification of girls when entering the period of womanhood. Most of the lines are straight, and crossed by other straight lines. These Indians belong to the Salishan family, and an old woman, Waxtko, was able to explain the meaning of the figures, 28 in number, which Dr. Franz Boas has edited from the notes of the collector in the "Bulletin of the American Museum of Natural History." Vol. VIII, article XII, pp. 227-230; octavo; New York, November 20, 1896.

*The Arrow.* Frank H. Cushing's address before the section of Anthropology, at the Springfield meeting of the A. A. A. S.,

(August, 1896,) contains a historical sketch on the development of the above weapon from its earliest beginnings to its most elaborate forms. This history is largely based on deductions from prehistoric remains, from implements used in connection with the arrows and especially from the multiple forms of arrows now found among primitive nations. The lance and spear are the originals from which the arrow has sprung. It is as old as the stone axe or the shaped knife of flint, if not older, and it was coeval with the knotted clubs and rough stones men picked up at need in the wilds they earliest traversed. There is no weapon that for ages held sway so potent over the mind of the destinies of men; it was the chief reliance and resource of primitive man in the two main activities of his life, war and the chase.

*Of the Annual Ceremonies* enacted at Walpi, a Moki pueblo located on the East Mesa of that country, in Arizona, Dr. J. Walker Fewkes has given a "provisional list," which even if it should be increased by later research, gives a correct idea of what constitutes the ceremonial calendar of religious festivities of that pueblo and of the other Moki settlements as well. This list has been published, with annotations, in the "Internationale Archiv für Ethnographie," Vol. VIII, Leiden 1895, quarto and are to the number of thirteen. In the more elaborate of these the festivals last sixteen days. Some are characterized by the worship of the sun, sun-rain, solstitial epoch, harvest and snakes and in all the purpose is perceptible of thanking the good spirits and the earth mother for the bountiful gifts and crops conveyed upon mankind. Some of the ceremonial days are marked by long maskerade processions or Katchina.

*Pacific Coast Shells from prehistoric Tusayan pueblos* is another article of Dr. J. Walter Fewkes, which appeared in the *American Anthropologist* of November, '96, pp. 359-367, it was also published separately, and is accompanied by illustrations. It is noteworthy, or rather extraordinary, that marine shells from the Pacific Ocean should be discovered so far inland in Indian graves of an incalculably old period. The three ruined pueblos, where the shells described were found in numbers (partly incrustated) lie south of the present Moki pueblos, and the quantity of prehistoric mortuary shells increases as we go south from the ruins near the inhabited pueblos of that Shoshonian group.

*Dr. Rodolfo Lenz*, professor at the "College of Pedagogy" at Santiago, the capital of Chile, is alert and busy in publishing further articles on the Chilean Indian dialects in the "Anales de la Universidad de Chile." The fourth number of the 103d volume of that periodical contains five "trozos menores" or smaller pieces in the Picunche and Huilliche dialects, some historical, some poetical; the fifth number of that same volume embodies pialogues in the Pehuenche dialect of Chilean, and sentences of

a syntactic import, all with interlinear Spanish translation, to facilitate the study of these rather consonantic forms of human speech. Another pamphlet is wholly in German and contains translations from Chilian tales and stories: "Araukanische Märchen und Erzählungen, mitgeteilt von Segundo Jara (Kalvun), Valparaiso, Helfmann, 1896, octavo, pp. 71. Some of these tales are animal stories, others mythologic or poetic pieces.

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*Pliocene Man in England*—A most important discovery recently made by Mr. W. J. Lewis Abbott, is announced in the January number of *Natural Science*. It tends to throw back the antiquity of man in our island to a far earlier date than has hitherto been supposed—in fact, long before the great Glacial period of geologists. At a recent meeting of the Geological Society, Mr. Abbott had some remarkable exhibits, on which our contemporary comments as follows:

The honours of this geological *soirée* went to Mr. W. J. Lewis Abbott, some of whose exhibits were indeed remarkable. From the Ightham Fissure alone he has increased Prestwich's list of thirty-seven British cave and fissure vertebrates to about ninety, all of which were shown, and among them one of the most interesting was *Canis lagopus*, the arctic fox. From the Hastings kitchen midden he has secured a large assemblage of diminutive implements, supposed for the most part to be fish-hooks, and to have been used by a peaceful race that in many parts of Europe were settled on the seashore, often in proximity to more warlike tribes. Concerning the customs of this race much information has been accumulated, and we hope in a forthcoming number to publish a paper by Mr. Abbott with illustrations of the extraordinary relics that he has found. He also had some remarkable specimens of stone-working, discovered on the supposed sites of ruined cities of India. Their strangeness consisted in the fact that the stone had been chipped into almost perfect cubes and globes, a feat which the modern imitators of the stone-workers, including Mr. Abbott himself, are quite unable to perform; many of these specimens, too, were delicately ornamented, presumably by the burning of an alkali into patterns incised upon them.

But the interest of all these specimens was completely cast into the shade by some rough-looking stones lying on the table. These were flints which certainly bore a striking resemblance to the work of man, which we believe the most critical expert would



say probably were the work of man, and which had been obtained by Mr. Abbott's own hands, in the presence of a witness, from the Cromer Forest Bed at Runton, where they were found sticking in the iron pan, portions of which were still attached to them. One of them showed an undoubted bulb of percussion. These specimens are among the most interesting evidences of human antiquity that have been turned up for many a long year. The Forest Bed, we may remind those of our readers who are not geologists, lies, according to Prestwich, at the base of the Pleistocene or Quaternary system, but is now usually regarded as forming the top of the Pliocene series; it contains remains of the cave-bear, of the rhinoceros, of the hippopotamus, various species of elephant, deer, and other species of mammals, both living and extinct. In this country, at all events, no one has ever professed to find the remains of man at so low a horizon, although the opinion has before now been hazarded that if they occurred at this horizon at all, they would be found at the place where Mr. Abbott has actually discovered them.—*Natural Science*, London, Eng.

*Dr. Franz Boas*, "Songs of the Kwakiutl Indians" contains an instructive article on Indian music; the subject-matter of it was collected on one of the frequent exploration trips made by the author to the Pacific coast, northern portion. The article was printed, with music notation and interlinear English translation of the Indian texts, in "Internationales Archiv für Ethnographie," edited by Dr. Schmeltz, Leiden (Netherlands), 1896, on nine quarto pages, and contains eleven pieces on a variety of subjects: love songs, war songs, children's ditties, etc. The melodies were recorded by Mr. John C. Fillmore and Dr. Boas independently, and on the whole the renderings of the music agree closely in both. The differences are recorded in foot-notes. Fillmore's records were obtained from phonographic cylinders, while those of Dr. Boas were written down from the singing of the Indians themselves.

## NOTES ON POLYNESIA.

BY JOHN FRASER, LL. D., SYDNEY.

ELLICE ISLANDS.—An interesting monograph on these islands has just been issued by the Trustees of the Australian Museum, Sydney. It is written by M. C. Hedley, Conchologist to the Museum, who spent nearly three months last year on Funafuti, the chief island of the group, for the purposes of scientific observation. The Ellice group is about 600 miles N.W. from Samoa, and 450 miles north from Fiji. Across the equator and 150 to the NW. are the Gilbert Islands, with the same physical features as the Ellices, but a very different population. The Line Islanders, as they are called, are bold, fierce, warlike; the Ellice people are mild and tractable, as befits their Samoan ancestry; for both they and their neighbors of the Tokélau group come from Samoan colonists. In 1841, Captain Wilkes, of the U. S. exploring expedition, discovered that they understood and spoke Samoan perfectly. Also Dr. Turner, when visiting the missions of the group some years ago, found in the possession of their heralds, a very ancient staff or stick, worm-eaten, decayed, and bound with splints; their first ancestors, they said, had brought it with them from Samoa, thirty generations back, and they named the valley from which it had come. Dr. Turner took it with him to Samoa, ascertained that it was of Samoan timber, visited the valley and heard there a tradition that long ago a large party had gone to sea in a *vaal* and never returned. The stick was a *too-too*, which an orator in Samoa holds in his hand while addressing a public assembly. But yet the present Samoans will not acknowledge them as their kindred, for the Ellice Islanders are a physically inferior race, with broad faces, short beards, curly hair—showing the admixture of earlier inhabitants with the Samoan immigrants.

Geologically, the Ellice Archipelago lies on the SW. edge of the great Central Depression of the Pacific, as described by Dana. Every island of the group is an atoll or lagoon island; in some the atoll is filled up with sand; in others it is filling up and forming reefs, and on the shore in many, there are sand dunes on the windward side. Funafuti itself is a cluster of 30 reef islets, surrounding a lagoon 12

miles in length ; each one of these has its own name ; the largest is about 7 miles long with a maximum of 700 yards in breadth ; it has a population of about 300 persons. The soil consists of broken and disintegrated coral and sand, and in the middle of the islet is a muddy mangrove swamp. To the south of this is much cultivation land, and the wells and bathing pools of the natives. At high water mark, there are evidences that the land has been elevated at least four feet. The whole atoll, with its islets, seems to rest on the summit of an Etna-like cone which, at a little distance outside the reef, descends precipitously to a great depth.

As to climate, 75° is to a native very cold, and about 80° is an average 'winter' temperature. The wind is gentle-mostly in the east, and rain is frequent. Hurricanes some, times occur and drought.

Of the vegetation of this atoll, the most striking to the eye is the cocoanut palm, rising to the height of over 80 feet. Everywhere it is *planted*, and a nut drifted on the beach does not seem to produce a tree. To a native this tree is the great stand-by for drink and food and trade ; he drinks the liquid within, he eats the kernal and stores the nuts themselves against famine. After twelve months the kernel has become red and soft ; it is even then palatable, and is eaten with fish ; at three years, the kernel is black, and softer still, but still wholesome. Copra, or dried kernel, is the sole export from Funafuti and in exchange for it the traders give tobacco, calico and boots. Some of the palms are marked for the production of *toddy*. A newly formed spathe is manipulated so that the rising sap drops from its point into a cocoanut cup suspended near by. The islanders do not use either kava or betel nut, but they drink this toddy in its natural state as a beverage, or they boil it down into molasses and then sweeten the water with it. Sometimes they make it into a sweet-meat. The green cocoanut husk, when steeped in water for several weeks, becomes the fibre from which is made the "*Sinnet*," so useful to the natives as cord.

The tree next in importance is the "*Fala*," or Screw Pine, the *Pandanus*. The people like the fruit, which has a sweet sugary taste ; the leaves make splendid thatch, and are manufactured into fine mats, or plaited into material for the native kilt (*tibi*). In either case, native dyes,—red, white, black,—are applied to form patterns. The *Fala-kai*, (edible screw pine), is also cultivated for its fruit, which is sweeter and much larger, and its leaves, which are broader. The chief timber trees are: [1] the Fetan, (*Calophyllum inophyllum*) ;

2] the Buka, (*Hermandia Peltata*) ; [3] the Fan, (*Schrosia parviflora*) ; and [4] the handsome *Barringtonia*. The first grows 40 feet high, and six or seven in diameter. The roots clasp the very rock, the limbs are heavy and thick, the foliage is a glossy dark green, and the sweet-smelling white blossoms are much valued for decoration and the making of earlands. The Buka is an equally tall tree, but slender, and its soft white wood makes canoes, paddles, and outriggers. The Fan does not require sand or soil, it flourishes well among broken coral debris ; its large smooth leaves form a dense foliage and refreshing shade. The nuts are like walnuts and hang from long stalks in clusters of twos and threes. The tree, itself, is about 25 feet high, and one foot thick. It has smooth bark and a round top. Many of the smaller trees and shrubs are valued by the natives either for the scents they yield, for oil lotions, or the colors which can be made from them to stain the native cloths and mats ; of some also the fruits and roots can be used for food. In fact the native trees and plants yield—food, fibre, timber, dye, scent, medicine.

Food industries are cultivation and fishing. South of the Mangrove swamp are 10 or 12 acres of land, made into moist gardens by excavating the soil to the depth of 6 or 8 feet, so as to reach the level of permanent swamp. The earth is thrown up into embankments, forming paths, and dividing the land into smaller blocks. Each family has one or more lots of garden land. The work is now done with a modern spade, but formerly with a wooden shovel or a turtle-shell hoe. The gardens are kept beautifully clean of weeds, and the plants cultivated are the aroids—brokka, (*Alocasia Indica*) ; taro, (*Colocasia Antiquorum*) ;—and the banana and the bread-fruit. Fish are caught in abundance by hooks, lines, traps, crab-pots, torch and spear.

Domestic life among them in the past was shamelessly polygamous, but christianity has changed all that. A bridegroom is expected to go and live with his wife's family ; afterwards she shares his home, cooked and worked for him and bore children, of which he was the legal father. That was the sign of matriarchy. As a rule every alternate child in a household was killed either before or after birth ; two children only were spared to live. A permanent village consists of about a score of huts on a street parallel with the beach. From the street branch off roads which, like the street, are kept in good order and free of weeds by the women and the penal labor of men. The street is shaded by rows of

bread fruit and cocoanut trees. Each hut is perhaps 40 feet from its neighbor, and has its own cooking arrangements at a little distance off; it measures about 12 feet by 20. The roof rests on the wallpoles, a ridge pole and rafters, and is thatched (on a stone wall), with bandanus leaves. The sides of the common houses are enclosed with movable palm mats hung on cords; the floors are also covered with mats. Garments, tools, etc., are hung from the roof or stuck in the thatch; there is no furniture. At night small bedrooms are formed within all round by arranging calico curtains or native cloth into tent-like shapes, six or eight feet square. Four or five mats on each other make the bed.\* The usual Polynesian mode of cooking prevails, by hot stones in an oven-hole in the ground. There is no native pottery nor is imported earthenware used. Every family has pigs, fed on the waste cocoanuts.

Religious beliefs here were Polynesian, but in a debased form, as if from contact with an inferior and more animistic race. Most of the deities were represented by large stones, or slabs of stone, which are supposed to be their homes, and on which offerings were laid; the people also worshipped the spirits of their ancestors and had deified many of the great leaders and warriors of their own race. They had sacred men, skilled to know the mind of the gods, and who, in communicating it, become possessed like the Pythian priestess of Apollo, and raved and foamed at the mouth and glared wildly. A small red stone might be taken as a god, and, when wrapped in cloth or leaves, was carried about by the priest to cure diseases. There were also sorcerers, who could bring disease upon the people. The deceased chiefs, whom they worshipped, were represented by their skulls, which were laid in rows in temples, and offerings made to them.

I have here given an abstract of the contents of Mr. Hedley's book, because Polynesian life and surroundings on all other coral islands are much the same as here described, and he who now reads will be enabled to see things as they are there. On the volcanic islands, life is much easier and richer, the soil more fruitful and the scenery grander, in many instances quite lovely to behold.

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\*The same custom, according to Catlin, prevailed among the *Moniaus*.—Ed.

## LITERARY NOTES.

*The Popular Science Monthly*, Feb. '97, has articles on "Indian Wampum," by the late Dr. Horatio Hale, and "Primitive Records in California," by Mary Sheldon Barnes, fully illustrated, showing the stone and bone relics ollas and pots, also on "Racial Geography in Europe," by Prof. W. C. Ripley;" also an editorial on "America's Man in the Ice Age." The thought is, that during this age there was a successive occupancy, indicated by the argillite relics, so on until the Neolithic period; also one by Capt. T. Maler, on Indian Habitations in Eastern United States, and others of great interest.

*The Anthropologist* for Feb. '97, has "Death Masks in Ancient American Pottery," by F. S. Dellenbaugh. The position is that the "Veiled Child" vessel was originally a death mask taken in clay and afterward moulded into a beautiful and life-like "portrait pottery" vessel.

The announcement of the discovery of Carver's Cave is rather strange, inasmuch as the cave has been known to citizens of St. Paul for many years. Of much value is the news that a large collection of Cliff Dwellers' relics, of 365 specimens, has been sent from New Mexico to the Carnegie Museum at Pittsburg, by Mr. S. N. Morris, and that a party, led by Mr. L. F. Janner, from Philadelphia have begun an exploration of an ancient ruined city in Chiapas. For a monthly the *Anthropologist* enjoys great advantages as its location is favorable. It is ably edited and is always courteous.

*The American Naturalist* for January has an article on "A Grooved Stone Axe from the Ohio Drift," by H. C. Mercer. This describes the finding of Neolithic axes in the gravel by a collector, Mr. Masterman, as follows: Green stone axe 5 feet down in clay, in 1849; another, 7 feet deep in gravel, in 1882; a celt 13 feet deep in in gravel, 1895; large chipped share blade 10 feet in gravel, in 1896. The same journal through '96 had articles on Cave exploration, by H. C. Mercer, also exploration in Yucatan.

*The Land of Sunshine*, C. L. Lummis, Ed., Los Angeles, Cal., for February, has an illustrated article on "The Cliff Dwellings at Montezuma Wells," with a full page half tone, showing the springs, and a cut showing the ruins, the first that has been presented to the public.

The same number has a medallion portrait of Dr. Washington Matthews, and a biographical sketch, a sketch which has been merited by the Dr. for many years

*The Atlantic Monthly* has been giving an interesting series of articles on "Western History," by W. H. Turner of Wisconsin; also "My Sixty Days in Greece," by Prof. B. L. Guildersleeve.

*The Proceedings of the American Philosophical Society*, January, 1896, has an article on "The Discovered in Egypt," by Flinders Petrie, 1895, illustrated by Mrs. A. C. Stevenson.

*The Report of the Canadian Institution of Toronto* has an article on "The Serpent Effigies at Rice Lake and Innisfield," one of them accompanied by the "Cosmic Egg," the other by a "Naga Well," described by Mr. A. F. Hunter and W. C. Boyle.

*Progress*, published by the University Extension Association, Dr. Sam'l. Fallows, editor, Sept., 1896, has interesting articles on "Oriental Archæology and Egyptology" as follows: "The Literature of the Ancient Egyptians," by Dr. Geo. Ebers; "The Literature of Babylonia and Assyria," by T. G. Pinches;" "The New Archæology," by W. M. Flinders Petrie, and a sketch with portraits of W. M. Petrie and of Mr. Pinches.

The remarks on *New Archaeology* by Dr. Petrie are worth quoting for their practical lessons. "The old Antiquarian first loved his collection, and then read about them—but now in the new system *everything* is a document to the archæologist. Formerly things were collected for their own sake (for their commercial value, too), their origins, their connections, their dates were never matters of curiosity. Now we collect for the sake of the facts which they tell, and their value depends on the precise knowledge of where they were found and with what other things they were accompanied. Instead of digging to get *things* we now dig to get *history*."

We need far more conscience and a far higher respect for our responsibilities. We need not only to record everything found, but also to reason on all we see, to draw our inferences on the spot, to work slowly, so as to be in time to decide critical questions as we go on, in short to reconstruct on paper the series of events, if we see the records in the ground."

## EDITORIAL.

## THE STUDY OF AMERICAN SCENERY.

[We have received from the publishers, Silver, Burdette & Co., Boston, an interesting book, entitled, "The Earth and its Story," a first book of Geology, by Angelo Heilprin, Prof. of Geology in the Academy of Natural Sciences, of Philadelphia. The publishers have also kindly loaned us a number of half-tone cuts, which are used in the book to illustrate the processes which are followed by the forces of nature, through which the "earth has been prepared for the abode of man."

These are processes that go back to the earlier periods of creation when the azoic and igneous rocks were formed, and the mountains and valleys began to appear. In the book the positions of the rock masses are explained, the distinction between the anti-clinal arches and synclinal folds clearly shown. The changes, which followed when sedimentary rocks were formed, are also spoken of, and cuts given to illustrate them. These cuts represent certain spots of nature which constitute interesting features of American scenery, one of them representing the horizontal strata, near Quebec, Canada.

The most interesting chapter in the book is the one which bears the title, "What a Mountain Teaches." This chapter is also illustrated by cuts, which represent other features in "American Scenery." One of them exhibits the river erosion of the Grand Cañon of Colorado. Another, the "Royal Gorge," in the Cañon of the Arkansas; still another, a Cut Across the Mountains at Glenwood Springs, Colorado; a fourth, a Gap of the Bow River, Alberta. To these cuts and descriptions which accompany them we call attention, as this explanation of American Scenery, especially of that which is found in its grandeur among the "great plateaus" of the west and on the borders of the mountain ranges is worth studying. The traveler who passes over this continent will always come to certain regions where the rock formations are not only grand and beautiful, but difficult to account for and if he is of a thoughtful, studious character, he will be continually asking how came these peculiar shapes? Such questions arise when one passes through the mountain scenery in the Eastern States, where history has marked the map,



and made memorable such remarkable spots as nature had long before laid its hand upon and made fit locality for these great events.

The questions, however, arise with ten-fold force when he reaches the region where only pre-historic races have left the impress of their presence, but have left no record of their thoughts or of the events in their history.

The grandeur of this western scenery has been described by various geologists, but the best descriptions are hidden away in the bulky geological reports which are given to the technicalities of the science and are rarely quoted. Occasionally archæologists have entered these scenes and described the mountains and valleys with their lofty peaks and deep cañons, in language which is impressive and clear, but even their descriptions are also hidden away in government reports and few learn about the causes which have been at work in producing these remarkable scenes, so that nature seems like a sealed book.

It is all the more refreshing and gratifying when one who has had access to the scenes and has become familiar with the conclusions of others, undertakes to bring out explanations of these grand objects in American scenery and gives a work to the public like this.

The strange fact is brought out by this little book, that nearly all of the carving of nature into such wonderful shapes is wrought by a most familiar and common element, one which we think is powerless, although it is useful, the element of water. We are not left to our imagination to ascribe all these grand objects to the action of fire and to think of the mountains and the rocks as plutonic in their origin shoved up by internal fires, which roll and heave in molten floods, for, we are told that there are no such fires, at least no "molten floods; that the earth is "solid throughout, and the rocks are kept so by infinite pressure, which raises the melting point to a fabulous height," and the liquid fires are superficial and work only in seams and openings, where water also reaches. The gentle falling of the rain, the running of the streams, and the rushing of the torrents across the surface of the earth have wrought the most marvelous changes, more than fire. The buttes and pinnacles and columns and standing stones are the results of erosion; the ravines, and gorges, and gulches, and deepest canons are also the work of water. This for ages has been cutting steadily through the most solid rocks, all the time working down to the level of the sea.

The cosmic force of gravity, though totally unseen, has strangely used this subtle element of water, as its keen bladed knife to carve out the terraces, and its plough to dig out the canons, and its augur to drill through the rock and produce the geysers so that the scenery which is so varied and so grand, is really the work of gravity.

The Colorado river tumbles through its bouldery course, and ploughs out a channel 18 miles in width and 200 miles in length, and 7,000 feet in depth, but the canon becomes so narrow that even a foot passage on either side of the stream is hardly possible. Ages were involved in the cutting and yet the work was sure and the changes great, for there was a uniformity in the force.

The transverse valleys or water gaps by which a stream which works down from the top has cut through a mountain range, are thus illustrations of the action of water, for the same causes that produced the deep cañons of the Colorado also produced the gaps in the Highlands at West Point, the Lehigh Gap of the Blue mountains, the gap of the Blue Ridge at Harper's Ferry, the Water Gap in Pennsylvania as well as those in Colorado and Alberta referred to above.

Mountain scenery is very instructive as well as inspiring, especially when we have an intelligent guide who can point out the salient features and describe the processes of nature by which they have been produced.

The book does not treat of Anthropology, but the view which it presents of Geology, connects so closely with this department, that it may well be studied as preparatory to the understanding of the "history of man."

The anticipations of man in nature is the thought impressed upon us.

We recommend this little volume to our readers for we design to publish a series of articles by some of the best geologists, on "Earth preparations for the abode of man," and we know no book which will better prepare the way.

#### DEATH MASKS AND POTTERY PORTRAITS.

In *Folk Lore*, for December, 1896, Hon J. H. Abercrombie, speaks of funeral masks in Europe and accounts for them by the desire to preserve the semblance of the living after death. A better explanation is, however, that it is the survival of a very ancient custom, and was possibly derived from the superstition as to the supernatural kinship and the recognition of the soul of the person by the clan divinities.

"Death Masks" of various kinds are scattered through Europe, Asia, Nineveh, Babylon and Peru, and many parts of America, the prehistoric custom having survived in Europe up to modern times.

In America these masks are found in mounds as well as on the northwest coast, and indicate a superstition about the recognition of the dead.

In accord with this is the article in the last number of the *Anthropologist*, by Mr. F. S. Dellenbaugh, on the faces so accurately reproduced in the pottery vases from Arkansas and Tennessee. These were not hand-work imitations, but were actual clay masks, taken from the face of the dead and moulded into a pottery vessel.



SACRED MASK AND CHILD PORTRAIT.

Another illustration is given in the child's portrait on the pottery vessel represented in the cut. We would say in explanation that masks were very common among all the aboriginal tribes and there was a peculiar significance given to them.

Miss Alice Fletcher says "that among the Omahas there was a two-fold recognition, that of the natural, and of the supernatural manifestation. Names called Nikia were given, and peculiar ceremonies attended the bestowal. These names, and the signs or totems, indicated a kinship with supernatural beings. There were times when the children were sent out to cry to the Wakanda and to dream the dreams which would give them a vision

of their guardian spirit or individual totem. The parents covered the faces of the children with soft clay and sent them forth to lonely places. "Four days and nights on the hills, the youth shall pray, not for any particular thing, but whatever good the Wakanda may give" and seek a manifestation and a vision of the mysterious power to which he must appeal when in need of help."

We cannot regard these masks then, merely as portraits of the children, kept for the sake of the living, but they were portraits which were buried with the dead, and were recognized by the supernatural beings and were, perhaps, the passports by which they would enter the Sacred Clans, and claim relationship in the unseen world. This does not explain the veil over the face, nor does it explain the peculiar symbol which appears tattooed on the side of the face, but when taken in connection with the fact that vases were often receptacles of food, and that beads and ornaments were still left upon the arms and neck of the child—as the writer has seen in various places—the thought that the portrait was really a death mask, moulded into pottery, becomes very significant, for then a very strong and touching manifestation of natural affection and belief in the supernatural kinship is exhibited.

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## BOOK REVIEWS.

*Books and Their Makers During the Middle Ages.* A study of the production and distribution of literature from the fall of the Roman Empire to the close of the Seventeenth Century, by Geo. Haven Putnam, A. M.; Vol. I. G. P. Putnam's Sons. New York, London. 1896.

"The Making of Books" is a subject to which the author, George Haven Putnam, has given a very close study for years, and as a result, a very interesting and instructive series of books have been written, of which this is the Second Volume. It is divided into two parts; the first, much the larger, being devoted to books and manuscripts; the second to the earlier printed books.

The date of the beginning of the manuscript period is about 479 A. D.—the end 1470. The first authors mentioned are Cassiodorus, S. Benedict, S. Columba, Cecilia the daughter of William the Conqueror. The Monkish Chronicles are next mentioned, and the sterling service rendered by King Alfred, the Benedictines of the Continent, and the Libraries of the Monasteries are next described. The Library of St. Augustine was bequeathed to the Church of Hippo, and the collection was preserved. Another smaller library was preserved in the Canterbury Cathedral. There was a public library founded at Constantinople as early as 54 A. D., and was said to contain no less than 20,000 Vols., but it was destroyed by fire. A collection was formed by Charlemagne, another in the college of Sorbonne. The early Universities of Bologna, Padua, Paris, Salamanca, and Valencia, of Spain, had libraries of manuscripts. They went into the business of making, renting and selling of books, and asserted their right to control the book trade. In the time of Charles V, all dealers in books, and makers of books, were exempt from taxes.

The purchase of a manuscript, in the Fourteenth Century, was attended with as many formalities as the transfer of a piece of real estate. The scarcity and costliness of books in the Middle Ages, did not preclude the instruction directly from books. It became customary when copies were loaned from libraries, to demand a security from the borrower.

A large number of manuscripts were placed in Ducal family libraries and the taste for elaborately illuminated manuscripts arose.—The insertion of family "arms" identified the personality and title of the owner. These illuminated Mss. are not so very old.

There is such a vast amount of information contained in the Volume, that no brief review can do justice to it. All that we can do is to recommend it to our readers as worthy of a place in their libraries.

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*The Mound-Builders of Louisiana.* Publications of the Louisiana Historical Society. Vol. I, Part IV.

We have received the Fourth Part of Vol. I of the publication of the Louisiana Historical Society, of which Alcie Fortier is president, and John R. Ficklen, secretary.

The society is about forty years old, but this seems to be the first published report.

The number contains an illustrated article by Prof. Geo. E. Beyer, on the Mounds of Louisiana, which has considerable interest. These mounds are situated on the Black River, near the Red River, and called the Larto Mounds. Another group, near Ball's Station, is called the Biddle Mounds. This is a group of rectangular pyramids, arranged in a straight line. The third group is on the Black River, and on the site covered by Jonesville, a group which has been described by the Bureau of Ethnology, 12th Annual Report.

The group on Larto Lake is very interesting on account of the shape and contents. It is composed of several conical mounds, which average about 50 feet in diameter at the base, and about 100 feet apart. The chief peculiarity of them is that they were connected by elevated passage-ways, and are supposed to have been, when thrown up, raised above high water, and used as domiciliary mounds, or the foundations of houses, resembling in this respect the crannogs and terra mares of Europe. The mounds are stratified and contain three layers of ashes and black earth, yellow loam between with skeletons, recumbent in the black earth. The supposition is that these mounds were erected at different periods, that they settled and overflowed, and were added to, and were accordingly very ancient. Prof. Beyer has described the skulls taken from these mounds. He thinks that they were of a very low grade and compares them to the Neanderthal skull, as they have very low foreheads. It was, however, the custom of the Choctaws and Creeks, to flatten the skulls by bandages, and so make them "flat-heads," a custom which prevailed, both in the north and in the far southwest, among the Mayas, though the reason for it is unknown. The art products from these mounds are of a high order. They consist of decorated pottery, urns, vases, bowls, cups. Some of them represent animal faces and some grotesque human faces. A shuttle and a plummet were found among the other relics. They are not the relics of an inferior race, for they are equal to any of the mound-builder specimens.

*The Egypt of the Hebrews and Herodotus.* By the Rev. A. H. Sayce. Rivington, Percival & Co., London. 1895.

This book is really a history of Egypt, from the beginning to the days of the Ptolemys and the Roman Emperors. The most valuable part of it is the beginning. In this the author gives the results of his Archæological studies and is especially clear when he shows the connection between the Egyptian history and that of the Israelites, as given in the Scriptures. It appears that the first Dynasties, in the days when the Pyramids were erected, were marked by certain "lost arts," especially the art of drilling stones with diamond pointed drills; and the art of placing massive stones so compactly together that they seem to be one solid stone. This was the period when Chaldea was at a high stage of cultivation, but Syria and Palestine were filled with rude tribes, which built the Dolmens and "rude stone monumnets." The next was the Patriarchal period, in which Egypt advanced, and gained great power.

The Archæological record of the two countries, is disconnected and fragmentary, and yet both of them confirm the Scripture account.

It is not strange that nations like Assyria, Babylon, and Egypt, should have no record of the events which transpired in Syria during the Patriarchal Age, or even the age of the Captivity in Egypt, or during the reign of the Judges, for there were no histories or chronicles kept in Syria. The history is entirely a religious one. The events could hardly be called national events, as there were no Monarchies among the Israelites. The usual records are those made by Monarchs, their Generals, and Officers.

The Israelites were long coming to a position among the nations of the earth. From 2500 B. C. to 900 B. C., there was scarcely any recognition of a nation in Syria; though the expedition of Chedorlaomes to the Dead Sea, is on record among the monuments of Chaldeæ.

The time of Joseph was the beginning of a period which was marked by the overthrow of the early kings and the reign of the Hyksos Kings, who originally migrated from Chaldea. During this period the Cuneiform language was used more or less in Egypt and Palestine, and Cuneiform tablets were deposited in both lands. About the close of the period Rameses II invaded the tribes living in Syria and Palestine and made a record of his victories on the rocks of Beirut. The Hittites were overcome at this time.

The days of Moses were contemporaneous with the last days of Rameses, and the first days of Amenophisor-Amenepthah, about 1250 B. C.

The only records we have of the presence of the Israelites in Egypt is the tale of the "Two Brothers," which furnishes a parallel to the story of Joseph and Potiphar's wife, and the retirement of the army of the lepers to the Wilderness, though the name of Ysraal has been discovered of late. It was during the reign of Rameses II that the conquest of Canaan by the Israelites took place. The Jewish Monarchies, beginning with Solomon and David, were contemporaneous with Rameses III, the 21st Dynasty.

The Kings of Ethiopia sailed down the Nile and swept the country and supplanted the Egyptian. The Sabako of the Bible is supposed to have been a Negro. After Sargon's death, Hezekiah was revolted from Assyria; the result was the invasion of Sennacherib in B. C. 701; but Egypt, under Tirhakah, assisted Israel. A statue in the Gizeh Museum declares that he was the Conqueror of the Bedouins, Hittites, Arvadites, Assyrians and the people of Aram Nabaraim; but Esar-haddon, in 670 B.C., drove the Egyptian forces fifteen days, became

Conqueror of Egypt, and erected the Stele, at Singerli, in Phœnicia. Egypt was organized under a Syrian rule and divided into twenty Satrapes with Pharaoh Necho at the head. Ezar-haddon engraved his victories on the rock at Beirout, on which, seven centuries previously, Rameses II had engraved his victories.

Dr. Sayce is doing most excellent service in writing the parallel history of the nations of the East, as light is thrown upon the modern discoveries in Archaeology. Nearly all of his books are in the sameline and are especially valuable to Bible students.

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*Mystic Masonry; or, The Symbols of Free Masonry, and the Greater Mysteries of Antiquity.* By J. D. Buck, M. D., F. T. S.; author of "A Study of Man," &c., &c. The Robert Clarke Company, Cincinnati. 1896.

The Historical and Psychologic development of Religion, from the Mysteries of Antiquity, to the great Doctrines of to-day, as shown by the universal distribution of Symbols is the underlying thought of this book.

There is much in it to interest the student of Anthropology, but his chief interest is in Chapter IX, "An Outline of Symbolism," in which he reviews the origin and development of Symbolism, and the relations it sustains to the doctrines of Zoroaster and of the Philosophies of the Hindoos, Egyptians, of Pythagoras and of the East.

While nothing new of course, is attempted, yet, the arrangement, and the thoughts suggested, are, to some extent, novel. He quotes largely, and to good purpose, from the "Morals and Dogma," of the late Gen. Albert Pike, the fountain of linguistic, symbolic, and mystical lore.

The matter is well worth the attention of the Orientalist.

J. H. M.

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*Report of the Geology of the Coastal Plain of Alabama.* By Eugene A. Smith, Lawrence Sohnson and Daniel W. Langdon, Jr., Geological Survey of Alabama.

There are many things in this report that will interest the archæologist. In the first place there is an account of the "Orange Sands" of the Lafayette period. An account of the strata and formations which lie between these and the so-called Port Hudson layer, which is supposed to be leaves.

Next there is a description of the "Cyprus Stumps," several generations of which have been found with the wood in good preservation in the brown mud, just below the Port Hudson deposit.

There is also a table taken from Dr. Hilgard's Report of the Pleistocene formations of the Mississippi River, five in number, one of which contains mastodon bones, drift wood and leaves. Dr. Hilgard says: "The stump stratum exists at about the same level over all the Delta plain of the Mississippi from Mobile to the Sabine River, from the Gulf Coast as far north as Memphis. These facts indicate the wide-spread prevalence, during the epoch succeeding the 'Drift' of quiet, shallow, fresh water lagoons and swamps of slightly varying elevations, through which the continental waters may for sometime have found an outlet, without the definite channel of the Mississippi of today."

This may show to us the condition of the Gulf States during the Glacial period—a period which thus far has not presented us the tokens of the presence of man in this region, even if it has farther north, and this is doubtful. Prof

Smith speaks of the Columbia formations, "which are reworked deposits of the Lafayette sands, the counterparts of which are presented by the beds of drift-like sands lying to the northward of the greater part of the Grand Gulf region of the Mississippi.

The movements of the land along these coasts in pleistocene and recent times is then described.

While there was a subsidence estuaries were formed, but the exceeding slowness of the movement has this ethnological bearing, that the elevation subsequent to the 'Drift' period had come to a standstill, or had nearly, if not quite, ceased, when the shell-heap makers arrived.

Some of these shell-heaps are out in the midst of the marshes, where it is not reasonable to suppose human habitation, if the ground had been a marsh as it is now. "The same shell-heaps furnish evidence of previous elevation and of recent, slow subsidence."

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See page 45.

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L. XIX.

MARCH, 1897.

No. 2.

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THE ALMANAC OF CHINA AND CENTRAL  
AMERICA.

The pre-Columbian inhabitants of Mexico and Central America were paper makers; the Mongolians were among the first manufacturers of paper. From the leaves of the maguey plant the Aztecs and Mayans prepared great quantities of very durable paper. In one of their records, preserved on this maguey paper, we are informed in their ideographic writing that "twenty-four thousand reams of paper were to be brought yearly, as a tribute, to the store-houses of the ruler of Mexico-Tenochtitlan."<sup>1</sup> Two cities are named in this record as the principal places of its manufacture—Amatillea and Amacoztilla. The first named city furnished a thin, white and transparent paper, while that from the latter was coarse and yellow. The people used the paper not only for books, but, like the Japanese and Chinese, for flags, banners, ribbons, clothing, burnt offerings at festivals, feasts and sacrifices, and for dressing their temples. It was extensively, almost exclusively, used by the religious leaders; the priests were the learned class, and from this tier of society came nearly all the books and the almanac. It consequently occupied that high and sacred place in America that it did in oriental countries.

Paper was prepared by the Aztecs and Mayas by soaking leaves of the maguey, macerating, beating and working into thin sheets. It was finished by sizing with varnish, or sometimes by coating with animal membranes. The sheets were narrow, but long, so that they could be folded book-like into books. The Javanese were paper-makers, as were all the tribes of Asia up to Japan. They made paper of the bark of the *morus papyrifera*, or the paper mul-

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<sup>1</sup>Cosmopolitan, Jan. 1895, Valentini, p. 332.

berry. The bark of the young mulberry was soaked in water until the tissues of the inner bark were rendered soft ; when sufficiently softened, and separated according to quality, the fibers were attached by placing together and beating. "The quality of the paper depends upon the care employed in the preparation, and on the frequent affusion of fresh water. By applying successive layers to the spots which are bare from the defect of fibers, and beating them until they unite, an uniform thickness is obtained."<sup>2</sup> The paper of Java, like that of Mexico, was of two qualities, one clear and light, another coarse and yellow ; and it was prepared by the priests who gained their principal livelihood by it. The Koreans,<sup>3</sup> Japanese and Siamese<sup>4</sup> made paper from the mulberry bark by a very similar process to that used by the Javanese and Mexicans.

The codices, or Aztec and Mayan records, were printed on long narrow strips of maguey paper, and then folded screen-like, with a board cover upon each end. "Paper was not rolled up, as was the custom in Egypt and Rome, but cut into strips and folded as screens are. Books were finished with two nicely prepared boards, as is still done in Siam and Burmah."<sup>5</sup> "The accessible codices were formed of a peculiar paper, made by macerating the leaves of the maguey (or century plant) and beating or felting the fibre and afterward sizing it with white varnish. Each codex consisted of a long sheet folded backward and forward like a screen, or like the ordinary Japanese book ; but unlike the oriental books both sides of the paper were used, and the sheet was not bound save by attaching boards to the outer folds as in dissected maps."<sup>6</sup> Bancroft, Landa, and other writers describe these Central American books in about the same language.

"The books of the Siamese open in one continuous sheet, folded fan-like ; the usual length of the page from eight to twelve inches, the breadth three to four."<sup>7</sup> The common books of Japan were of the same shape ; and the folded book with board ends was common from Siam to Japan, and was in the same identical shape with the *amatl* of Mexico and Mayapan—with only one difference, the Mexicans and Mayans wrote on both sides of the paper. The Almanac of Asia and America was at least identical in material and outward form.

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(2) History of Java, Raffles, vol. 1, p. 195.

(3) Rep. U. S. Nat. Museum, Hough, 1891, p. 440.

(4) Bowring's Siam, vol. 1, p. 240.

(5) Cosmopolitan, supra, p. 334.

(6) A Primer of Mayan Hieroglyphics, Brinton, p. 18.

(7) Bowring's Siam, Vol. I, p. 239.

From the fact that the Mexican and Mayan codices are filled with numerals, pictures of the gods, ideographic signs of the seasons, days, cardinal points, colors and other features of the *ton-al-amatl*, "we become certain that in these records we have before us time-counts—some sort of ephemerides or almanac. This is true of all the codices, and of nine out of ten of the inscriptions."<sup>8</sup> Landa, the second bishop of Yucatan, who passed nearly thirty years among the Mayas, and became very familiar with their language and literature, gives us some very interesting details concerning the contents of their books. "The sciences that they taught were the reckoning of the years, months and days, the feasts and ceremonies, the administration of their sacraments, the fatal days and seasons, their methods of divination and prophecies, events about to happen, remedies for diseases, their ancient history, etc."<sup>9</sup>

A belief in witchcraft, divination and astrology, was common to China, Japan, Mexico and Central America. The power of the diviners—the priests of Mexico and Central America, was so deeply impressed upon the native character that every revolt against Spanish rule since the conquest has been guided by them. Under the name of *nagualists* the priests who prepared the almanacs, conducted the sacrifices, and represented the earthly and celestial sovereigns, ruled the most cultured nations of America. These native shamans were thought by the people to represent the gods; to produce rain by incantations and prayer; to make a stick look like a serpent, a mat like a centipede, a stone like a scorpion; the *nagualist* could transform himself into a tiger, a dog, or a bird; he could foretell events by reading signs; could interpret dreams, and bring success in hunting, trading, in crops or war.

From the number and name or the day and hour of the birth, the priests of both China and Central America pretended to forecast the destiny of the child, and state the power and spiritual influence which should govern its career.<sup>10</sup> From an examination of the rules and fixed forecast laid down in the almanac the child was named, its good or bad future accurately marked out, its life regulated, and its marriage determined. Francisco Nunez de la Vega, one of the early Spanish bishops in Central America, has left an interesting account of the pretensions of the native priests. "The Indians of New Spain retain all the errors of their time of heathenism preserved in certain writings in their own languages, explaining by abbreviated characters and by figures painted in a secret cypher the places, provinces and names

(8) *Primer of Mayan Hieroglyphics*, Brinton, p. 18.

(9) *Relacion de las Casas de Yucatan*, Landa, p. 44.

(10) *Nagualism*, Brinton, p. 20.

of their early rulers, the animals, stars and elements which they worshipped, the ceremonies and sacrifices which they observed, and the years, months and days by which they predicted the fortunes of children at birth, and assign them that which they call the *naguals*. \* \* \* There are certain bad Christians of both sexes who do not hesitate to follow the school of the devil, and to occupy themselves with evil arts, divinations, sorceries, conjuring, enchantments, fortune telling and other means to forecast the future. These are those who in all the provinces of New Spain are known by the name of *Nagualists*. They pretend that the birth of men is regulated by the course and movements of stars and planets, and by observing the time of the day and the month in which the child is born, they prognosticate its condition and the events, prosperous or otherwise, of its life; and the worst is that these perverse men have written down their signs and rules, and thus deceive the erring and ignorant."<sup>11</sup>

Doolittle in his pictures of "Social Life in China," gives the rules by which the natives of the Flowery Kingdom determine the selection of fortunate days, and prognosticate the events of life. The fortune tellers, however, are always circumscribed in their art by the almanac which is annually prepared by the priests at Peking. "The time selected always falls on one of the days which in the imperial calendar is marked as lucky. Important business is never commenced on those days which the calendar marks as unlucky or unpropitious. If the question should be raised, Why consult the selector of days at all in regard to a fortunate time for the transaction of business, when the imperial calendar has already plainly intimated what our fortunate and what our unfortunate days? the answer is, While certain days generally fortunate, they are not, of course, fortunate to all persons alike. These days will prove unlucky to those who are born during certain years, and this must be ascertained by application to those who are acquainted with the rules relating to the subject. Hence the necessity of places where a bona fide lucky day may be determined upon, and hence the universal application of men upon the eve of entering upon important affairs to those who are able and willing to help them in their necessity!"<sup>12</sup>

No important event in either China or Central America was undertaken in opposition to the voice of the diviner as expressed in the imperial calendar, and applied to the individual case by the fortune teller or priest. The soil was not broken, the seed not sown, the harvest not gathered, the house not built or repaired; the hunt not begun; the marriage not entered upon or consummated the child not named, nor the dead buried, until the almanac was consulted and a propitious day chosen. If the alma-

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(11) Constit. Diocesan, Vega: *Nagualism*, Brinton, p. 25.

(12) *Social Life in China*, Doolittle, Vol II, p. 344.

nal marked the day unlucky another was selected; if lucky the act was performed or the labor begun. A Chinese wife will neither buy nor make her dress on any but a lucky day; the child's exact future, in both China and Central America, was predestined by the conditions fixed in the calendar upon the hour of its birth. The Chinese husband will not purchase land, begin a law-suit, go visiting, repair the house, shave, nor go to market without first consulting the almanac and finding the day to be lucky for it. "No one ventures to be without an almanac lest he be liable to the greatest misfortunes, and run the imminent hazard of undertaking important events on blackballed days."<sup>13</sup>

In the notes upon "An almanac adjusted according to the chronological calculations of the Ancient Indians of Yucatan, for the years of 1841 and 1842, by Don Juan Pio Perez," the author says: "The notes or remarks *utz, yutz, kin*, a lucky day, *lob, u lob kin*, an unlucky day, signify that the Indians had their days of good and of ill fortune, like some of the nations of ancient Europe; although it is easily perceived that the number of their days of ill-fortune is excessive, still they are the same found by me in three ancient almanacs which I have examined, and found to agree very nearly."<sup>14</sup>

That a fair comparison may be made of the character and contents of the Chinese and Central American almanac, the first thirty days of the Perez almanac for 1841 is set opposite a translation of the same days of the year in the current Chinese almanac for 1896. The Chinese translation was made by Mr. Charles Kan, a Chinese merchant of Tacoma; from the Perez almanac the Mayan words have been omitted as immaterial, while the native chronology has in both cases been left out for the same reason.

#### THE CONTENTS OF A CHINESE AND MAYAN ALMANAC.

July.	CHINESE.	MAYAN.	July.
16.	Lucky day, but not for funeral.	Good as the beginning of Pop.	16.
17.	Good day for cleaning house.	Good for planting.	17.
18.	Good day for beginning harvest.	An unlucky day.	18.
19.	Good day for fishing and repairing house.	Good for planting	19.
20.	Lucky day, not for wedding	A good day.	20.
21.	Good day for marriage engagement	A good day.	21.
22.	Unlucky day.	Good for hunting; for the settlers.	22.
23.	Lucky day, not for funeral or buying land.	Good day, without wind.	23.
24.	Lucky day, not for digging well.	A bad day.	24.
25.	Unlucky day.	A good day.	25.
26.	Good day for school, not for visiting.	A good day.	26.
27.	Unlucky day, no loan today.	A good day.	27.

(13) The Middle Kingdom, Williams, Vol. II, p. 80.

(14) Incidents of Travel in Yucatan, Stephens, p. 448.



28. Good for wedding, not for law suit.	An unlucky day.	28.
29. Good for marriage engagement, and purchasing cattle.	An unlucky day	29.
30. Good day for funeral, not for visiting.	Good day in which are born writers and wise men.	30.
31. Unlucky day.	A good day.	31.
1. Good day, not for wedding of funeral.	Good day for the nobles ; the burner gives the fire scope.	1.
2. Good day for hair cutting, not buying land.	A bad day.	2.
3. Unlucky day.	An unlucky day.	3.
4. Lucky day.	A good day.	4.
5. Unlucky day.	A bad day, as the root of no.	5.
6. Good day for beginning to build house.	An unlucky day.	6.
7. Good day for wedding and moving house.	An unlucky day.	7.
8. Lucky day, but not for funeral.	An unlucky day.	8.
9. Unlucky day.	An unlucky day.	9.
10. Good day to taking oath of office.	An unlucky day.	10.
11. Good day to beginning built house.	A bad day, death in the fire following.	11.
12. Lucky day, not for funeral or buying land.	An unlucky day.	12.
13. Not a good day for wedding.	A bad day, sudden deaths.	13.
14. Lucky day, not for funeral.	An unlucky day, sudden deaths.	14.
15. Good day for fishing.	An unfortunate day.	15.

It will be noticed that the greatest number of unlucky days in the lists given is in the Chinese calendar ; for instance, July 16th, is noted as "lucky day, but not for funeral," the 20th is "lucky day, not for wedding," while the 23d and 24th, and other days have unlucky features. Out of the thirty days in the Chinese list twenty are noted as unlucky for some things, while out of the total in the Mayan list but seventeen have evil tendencies. Every day in the Chinese and Mayan year had either its good or bad quality fixed by the diviner ; it was lucky for some things and for some persons, and unlucky to others. Besides this good or ill character attached to each day, the rules of divination, both in China and Mayapan fixed specially the future of the individual by the hour and day of birth, and by the condition of the planets at the time, as well as by other common rules.

The signs and rules thus written down by the Mayan priests were, Dr. Brinton informs us, written in "some sort of ephemeral rides or almanacs." Lists of the days of the year were prepared by the priests of China and Central America ; the feasts and festival days were fixed ; the good or ill fortune of each day was determined ; and the result was printed or painted in hieroglyphics upon folding books. In each region, also, besides the matters above enumerated, the almanacs contained information relating to crops, household duties, and medical recipes. This information together with an understanding of the scheme of the elements, cardinal points, colors, stars, and other natural phenomena, enabled the priests of China, Japan, Mexico or Central America to perform his full mystic duty as the representative of the gods.

Besides the divinatory features of the Mayan almanac it also contained medical recipes and directions. "A favorite theme with the the writers of the 'Books of Chilan Balam' was the cure of diseases." Bishop Landa explains the "chilanes" as "sorcerers and doctors," and adds that one of their prominent duties was to diagnose diseases and point out their appropriate remedies."<sup>15</sup> The Mayan word "balam" means spotted tiger or jaguar. LePlongeon says that this animal was the totem of the lords or high priests of Chichen-Itza, and he names the ruler of that Mayan city Chaacmol or Balam, meaning spotted tiger or leopard. According to these authorities, then, the books of Chilan Balam are "The books of the High Priest and Doctors of the totem of the Spotted Tiger." Cuculcan, the reputed founder of the Mayan calendar, is said to have come from the west, and was worshipped, not only as the founder of the calendar, but as a god of chills and fever, and as one skilled in leechcraft."<sup>16</sup> In short, the priests of Central America were physicians as well as moral teachers, and wrote their directions in the almanac. The various books of Chilan Balam (almanacs) contain four classes of matter:

1. Astrological and prophetic matter.
2. Ancient chronology and history.
3. Medical recipes and directions, and
4. Later history and Christian teachings.<sup>17</sup>

The prominent and ancient features, however, were the astrological, prophetic and medical directions, and it is in these respects that it exactly agrees with the Chinese almanac.

The large Chinese almanac for 1896 consists of about 300 pages of hieroglyphical printing. About 200 pages are filled with astrological and divinatory rules and statements, those relating to fortune-telling and palmistry, while fifty pages or more are taken up with medical recipes and directions, about on a par with those of Central America. Barring the fourth class, "Later history and Christian teaching," there is a great similarity in the character of the entire contents of the almanacs of China and Central America,—they were on the same plane of development in this respect.

The almanac of China is prepared under the eye of the Emperor at Pekin. It is arranged and the character of the days and of all the matter contained in it determined by the priests in the temple. When the priests have finished the arrangement, classification and character of its contents, it is then printed by the government and sent out for the guidance of the people. The name of the Mexican almanac was "tonal-amatl," or "priests book." It was the priests book in China, Japan, Mexico, and Central America,

<sup>(15)</sup> *Essays of an Americanist*, Brinton, p. 272.

<sup>(16)</sup> *A Primer of Mayan Hieroglyphics*, Brinton, p. 38.

<sup>(17)</sup> *Essays of an Americanist*, Brinton.

and when once printed or painted in the common hieroglyphics, and sent out to the people, it represented in both lands the voice of the gods through the priests, and was obeyed with a blind and unwavering faith. It was a guide in all their affairs of life from birth to death. It closely affected the hearts and minds of all the people in both regions. It guided them in health and in sickness, in business and in sport, in government and in religion. It was much more to them than a mere "time count" or an ordinary almanac. It was their medical guide, their spiritual adviser, the controller of their every day actions,—their divine book, their Bible.

TACOMA, WASH.

JAMES WICKERSHAM.

## THE ABORIGINAL REMAINS OF BALSAM LAKE, ONTARIO.

### SECOND PAPER.

After a brief description of the places where relics are found, namely, village sites, graves, etc., it will be necessary to describe the relics themselves, which may be divided into two classes, as follows: Those from localities showing no traces of contact with white men; and those of the early French, or trader, period.

The first class must necessarily be composed of implements, utensils, and ornaments, made from stone, bone, horn, clay, native copper, and shell. The last class embrace many modern looking relics, some of them made to represent European objects and faces.

The celts, axes, adzes, chisels, gouges, slick stones, mullers or pestles, embrace all sizes, forms, and material, so well known to students of Canadian Archæology, from granite celts pecked into shape, and polished argillite gouges, to rough slabs of green stone and other dioritic rocks worked to an edge. The sizes vary from two to fifteen inches in length. None of these, however, are grooved, except two hammer stones.

CELTS.—It is a noticeable fact that the majority of the celts, or "skimmers," found here, in common with those from the district east to the Ottawa River, are of very poor workmanship. It is not that their makers were deficient in mechanical genius or perseverance to make them better, for witness the excellent carving and modelling of their pipes, and the neatness of their gouges and chisels, and the fine finish of their banner stones. There must be some reason for it, and the celts seem to have been made on the "good enough" principle. So, consequently, we see that, barring being worked to an edge, very little work is put on the body of the implement other than bringing it to a shape desirable. In some cases the "poll" of the celt is pecked to a shape

convenient to grasping in the hand, but in the majority of cases the natural fracture forms the poll, with only the protuberances and angles worked down by rubbing. An exception, however, occurs in the shape of an axe of form and material totally foreign to this section. It is supposed to be of jade, and is a beautifully polished blade of dark green color, approaching black, with one corner of the bit, or cutting edge, of a light mottled green. The poll has been ground to a blunt edge, which has subsequently been destroyed by abrasion. Dimensions, six by four inches, and seven-eighths of an inch thick; the edge is perfect and side angles well defined, and sides flat. If this is jade, it is the first example on record that has been found in Ontario, and furnishes another proof of the internal traffic existing in North America before the advent of Europeans. The Northwest Coast Indians and Alaskans used jade axes and adzes, but the material occurs there as drift—Siberia being the nearest country where it is found in situ. Wilson, in "Prehistoric Man," Vol. I, pp. 123-126, informs us that the Caribs of the Lesser Antilles, previous to, and at the time of discovery, worked in mottled jade, and made excursions to the mainland to obtain it; but he does not say whether it there occurs as drift or not. The ancient Mexicans also used jade. These rough celts, axes and adzes are very plentiful. The adzes are distinguishable by being slightly different in their longitudinal section, one flat side, and the other more or less convex. They do not occur frequently.

CHISELS are more rare and are better made, the surface being worked all over, but rarely polished; material being confined to dioritic rock, or greenstone, with a few of slate, and extend in size from small ones of two inches in length, to the long ceremonial double bitted ones of thirteen inches. The latter ones are called "ceremonial," for, generally being made of slate, they are too soft for actual use, and their only functions seem to be in displays.

GOUGES, as a rule, are finely made of argillaceous material. They are comparatively rare, though very plentiful to the east towards Lake Rideau, where numbers are found on the shore near the water. The pattern occurring most frequently is that of having the groove, or hollowed part, extending about one-third the length of the implement, whilst the poll is worked to a hand hold, the body being round or oval in section. Those gouges with one end chisel shaped, or combination of celt and gouge, occur occasionally, and in those specimens the workmanship is excellent. These are always polished exquisitely, and the sides are flat and rectangular, giving an oblong cross section. Those gouges that have the hollow all the way through to the poll are not represented here, though occurring in large numbers in eastern Ontario. We do not believe that these gouges were used in tapping maple trees for sap, as some of them are very

small, and the difficulty would be in striking them in deep enough, and the material being slate, they would not stand a forcible blow. The uses to which these and the adzes were put to, were undoubtedly the hollowing of canoes from logs, troughs, and mortars, the gouges being used in finishing off; fire, of course, being employed as an adjunct.

**HAMMER STONES** were generally the first available suitable pebble, but we have two or three worked ones. One especially is cylindrical in form, with flat ends and a slight groove near one end; shows marks of abrasion; dimensions, four by two and one-half inches.

**RUBBING STONES**—These are generally small stones or pebbles of various shapes, the material predominating being argillite and sandstone. These tools are usually of a size suitable to be held in the hand, and as the name denotes, were used for rubbing, polishing and sharpening implements. A few have grooves in them, as if made in the process of rubbing the ends of bone splinters to points.

**SLATE KNIVES**—Semilunar knives are of rare occurrence; they resemble those described by Abbott in *Primitive Industry*—material being Huronian and other slate. Those large slate implements resembling spear heads, are known here as "womens' knives," after an Esquimaux term, though this term should include semilunar knives as well, for the Esquimaux women use that pattern of knife in dressing skins. These womens' knives were probably fastened to a short haft in the same manner that spear heads were.

**CHIPPED ARROW AND SPEAR HEADS**, though not numerous, embrace all the various types. The material being usually chert or white quartz. These are found along the Huron trail, and have not been noticed, so far, from village sites. This goes to show that game, especially large game, was scarce; or that they were hunted with arrows tipped with bone and horn, which would speedily decay unless preserved by the alkali acids of the ash beds; and, that arrow and spear heads of chipped stone were not manufactured to a large extent. It was not on account of material that these are lacking, for the village sites abound in flakes and nodules of flint, quartz, jasper, and chert, and I have observed large masses of chert on our limestone rocks, while quartz exists in the granite regions a short distance to the north.

**OTHER CHIPPED INSTRUMENTS**.—The awls are the ordinary club based variety made of quartz or chert. Scrapers embrace the horse-shoe, capshaped, circular, and ovate types. No doubt the larger chips and flakes were used for scraping, cutting, and sawing purposes.

**GORGETS AND BANNER STONES**.—The square and oval types of gorgets occur, one specimen being square with concave sides, and the longitudinal section of another being concavo convex,

the holes being bored from the convex side above; material of these gorgets is slate, sometimes Huronian, and two or three holes is about the average. No butterfly banner stones have been found or that class of ornament known as bird and bar amulets; though both occur plentifully in western Ontario.

MORTARS are usually found in the vicinity of village sites, and are hollowed out of the tops of large granite or gneiss boulders; of course those are stationary, but sometimes smaller ones, suitable for being carried around in canoes, are found made out of slabs of the same material, sometimes hollowed on both sides. The depressions are shallow, about 2 inches in depth, by 10 or 12 in diameter. The upper stones for these mills are circular worked stones, of about 6 inches in diameter and about 2 inches thick.

DISCS.—Large numbers of stone and pottery discs, and a few of shells, are picked up in numbers on the village sites. These are of all sizes and in all stages of manufacture, from one-half inch to three in diameter, and up to  $\frac{3}{4}$  inch thick. The stone discs are either limestone or steatite, and the shell ones are of fresh water unios. This class of relics, especially the larger ones, have been called "chungke stones," used in a game called chungke, but the term is not applicable to all cases, for with us the majority are perforated and are too small. We may divide them in accordance with their supposed uses. The largest unperforated ones are chungke stones; the large and thick perforated ones spindle whorls and drill weights; the small perforated ones are beads, and the medium and small unperforated ones used in gambling games, similar to the game in vogue amongst our northwest Indians at the present day, which consists in passing a stone or small object from one hand to another, or concealing it about the person, whilst the opponent guesses where it is. Some people consider the smaller discs as buttons. The pottery discs were made from fragments of pottery, as evinced by the pattern on them and the curve of the pot, and may be considered makeshifts, as they are usually rough with slightly ground edges and rarely perforated, as if made in a hurry during the progress of some game. Another idea is, that they were made by children for some amusement, or in imitation of their elders. The shell discs may be unfinished wampum. By examining the Reports of the Canadian Institute, and Boyle's Primitive Man in Ontario, a good idea of these discs will be obtained.

STONE TUBES as figured by Abbott in Primitive Industry have not occurred yet in this section to my knowledge, but do so in western Ontario.

MISCELLANEOUS.—A large number of worked but unfinished implements; pieces of graphite, hematite, and steatite, slabs of slate and green stone abound on the village sites; these were the "material" of the aboriginal workshop.

**HORN IMPLEMENTS** are of comparative rarity and but few occur. Deer, caribou, and moose horns being very porous in the core absorb moisture and decay rapidly; moreover, mice are very fond of gnawing them: this will probably account for their absence. Amongst the horn relics recovered we may mention an implement resembling a Skinner, with a hole for suspension; a few tallies; a pipe; some arrow heads, in which the cellular centre has been removed, forming a socket for inserting a shaft; and a couple of "beaks" or "war hawks" for inserting into club heads. The latter are split off the butt of the horn, and are curved like a bird's beak, with a sharp point; dimensions about six inches long, one and one-half wide, by less than an inch thick.

**THE BONE ARTICLES** consist of awls; needles, eyed and eyeless; harpoons; arrowheads, tallies, and pottery markers; the latter being made by sawing off one end of a bird's hollow bone to leave the impression of a ring, and pointing the other end to make strokes. In bone ornaments we have polished sections of small hollow bones for beads, and metacarpal bones of animals, with the fronts and backs cut out, for bangles. One metacarpal bone has the larger end cut off and perforated eight times around the edge, with a longitudinal perforation down the centre from the smaller end to the hollowed part. Small perforated bones from fishes' heads are found. These are locally known as "Indian money," but their real use, in conjunction with perforated tusks of bears and wolves, which are associated with them, may be as necklaces, or attached to the dress as a bangle, after the fashion of the Esquimaux. Several of the bears' tusks are ground to a scraping edge, used by laying flat on the ground part and shoving from you.

**SHELL IMPLEMENTS** are confined to the aforesaid discs, and scrapers. A peculiarity noticed about some of the scrapers is that they have evidently been used by left handed persons. Fresh water unio shells and salt water helices perforated for suspension are found in all the village sites. Sometimes one picks up large river mussels ground all over to a smooth surface, with the edges worked down, as if used as spoons. The presence of helices (*S. Helix*) or dog whelks show intertribal barter with nations living nearer to the coast. Carver, in his travels, 1793-'96, remarks on the prevalence of small sea shells among the interior tribes, who used them as ornaments and valued them for their scarcity. There are three varieties of the unio native to this section of Ontario—northern centre, viz., *U. Oblongus*, *U. Complinatus*, and *U. Margeritifera*. The river unios are larger and thicker than the lake unios. No wampum has been discovered in this section yet, to my knowledge.

All these worked shells, as well as the bone and horn articles, and the discs come from village sites.

MIGRATIONS OF THE LENNI LENAPE OR  
DELAWARES.

## IV.

The relation, geographically, of the Iroquoian family to the Algonquins may, it is presumed, be taken as an indication that the former preceded the latter in the possession of the eastern territory, whether we adopt the one theory or the other, in reference to the general course of migration. Dr. Daniel Wilson in his paper on "The Huron-Iroquois of Canada" (Royal Society of Canada, 1884,) takes this view in regard to the comparative ages of these two groups in this region. As a stream meeting an obstruction it cannot overwhelm, divides and circles about it, so it would seem that the Algonquian tide, finding the firmly planted Iroquois an obstruction it could not sweep away, flowed around them, filling the unoccupied spaces. What was the general course of this Algonquian tide? As there are few, if any, scholars of the present day who claim that this course was northward, in prehistoric times, except along the limited space of the New England coast, we may dismiss this view from consideration.

Mr. Gallatin, who studied the languages of this family with special care, expresses the opinion in his "Synopsis of the Indian Tribes," that the northern Algonquins were probably the original stock of the family. In this northern division he includes the tribes dwelling north of the great lakes.

One of the oldest and most important traditions of this family is that of the Lenni Lenape or Delaware Indians, recorded by Heckewelder, but given more fully in the well known "Bark Record" or *Walum Olum*.<sup>\*</sup> This begins with a creation myth, then gives an account of their wanderings, the passage over some important stream or water way, their war with the Talega (Cherokees), in which they were aided by the Talamantans (Hurons), and their final settlement on the banks of the Delaware, from which they obtained their modern name. It is now generally admitted that the Nemassipi ("Fish River" or *Mes-susipu*), of the tradition could not have been the Mississippi, as Heckewelder supposed, but the St. Lawrence in some part of its course, most probably in one of the links connecting the lakes, as, for example, Detroit River. The correctness of this opinion cannot be better shown than in Dr. Hale's words, which we quote as follows:

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<sup>\*</sup>This record, which has recently been published by Dr. D. G. Brinton, as Vol. V of "Aboriginal American Literature," contains in one column the original Indian symbols, in another the signification in the Lenape or Delaware language, and in a third the English translation.



"The country from which the Lenape migrated was Shinaki, the 'land of fir trees,' not in the west, but in the far north,—evidently the woody region north of Lake Superior. The people who joined them in the war against the Allighewi (or Tallegwi, as they are called in this record), were the Talamatan, a name meaning 'not of themselves,' whom Mr. Squier identifies with the Hurons, and no doubt correctly, if we understand by this name the Huron-Iroquois people, as they existed before their separation. The river which they crossed was the Messusipu, the 'Great River,' beyond which the Tallegwi were found, 'possessing the east.' That this river was not our Mississippi is evident from the fact that the works of the Mound-builders extended far to the westward of the latter river, and would have been encountered by the invading nations, if they had approached it from the west, long before they arrived at its banks. The "Great River" was apparently the upper St. Lawrence, and most probably that portion of it which flows from Lake Huron to Lake Erie, and which is commonly known as the Detroit River. Near this river, according to Heckewelder, at a point west of Lake St. Clair, and also at another place just south of Lake Erie, some desperate conflicts took place. Hundreds of the slain Tallegwi, as he was told, were buried under mounds in that vicinity. This precisely accords with Cusick's statement that the people of the great southern empire had 'almost penetrated to Lake Erie' at the time when the war began. Of course, in coming to the Detroit River from the region north of Lake Superior, the Algonquins would be advancing from the west to the east. It is quite conceivable that, after many generations and wanderings, they may themselves have forgotten which was the true Messusipu or 'Great River,' of their traditionary tales."—*Am. Antiq. V, 117.*

It will be seen from this that Dr. Hale places the starting point in "the far north—the woody region north of Lake Superior;" an opinion with which we can justly agree. His further remark that "in coming to the Detroit River from the region north of Lake Superior the Algonquins would be advancing from west to east," is noticeable, considering his theory heretofore mentioned. Dr. Brinton passes to the far east in his interpretation of this tradition. "Were I," he remarks, "to reconstruct the ancient history from the Walum Olum, as I understand it, the result would read as follows: At some remote period their ancestors dwelt far to the northeast, on tidewater, probably at Labrador. They proceeded south and west, till they reached a broad water full of Islands and abounding in fish, perhaps the St. Lawrence about the Thousand Isles. They crossed and dwelt for some generations in the pine and hemlock regions of New York, fighting more or less with the Snake people and Talega, agricultural nations living in stationery villages to the southwest of them, in the area of Ohio and Indiana," etc.

The rigorous climate of their original home, and its geographical position, are clearly set forth in the following verses :

"It freezes where they abode, it snows where they abode, it storms where they abode, it is cold where they abode.  
At this northern place they speak favorably of mild, cool (lands) with many deer and buffaloes.  
In that ancient country, in that northern country, in that turtle country, the best of the Lenape were the Turtle men."

The direction in which they started and traveled is also clearly stated.

"To the Snake land, to the east they went forth, going away, constantly grieving."

It is difficult to understand how this course would take them from Labrador to the Thousand Islands. It is true it is said :

"The fathers of the Bald Eagle and the White Wolf remain along the sea, rich in fish and muscels.  
Floating up the streams in their canoes, our fathers were rich, they were in the light when they were at those islands."

This, however, would apply with far greater consistency to Hudson Bay, or even lake Winnepeg than the ocean coast, as in following the rivers south, or southeast, they would be moving up stream. Moreover, it is twice expressly stated that Snake Island was "to the east."

In attempting to explain the tradition we should follow it as closely as possible consistent with other data. The references to the sea in the traditions of Algonquins, Siouans and Iroquoians, have been too hastily assumed to refer to the ocean, and it is easily understood how later versions of these traditions, given by Indians, would make the references apply to the ocean. The whole tenor of the Bark Record indicates a movement southeastward, and is at variance throughout with the idea that they came from the coast of Labrador or from the Atlantic shore at any point. If we will bear in mind the fact that if they started from the shores of Hudson's Bay, this great water would be to them the "sea," the great water, until they came into the vicinity of the true ocean, the difficulty of explaining the references to the sea will vanish. Add to this the generally accepted tradition of the Indians of New England as given by Roger Williams, that they came from the southwest, and we would, according to the theory which brings them from Labrador, carry them completely around a circle.

Having turned their course toward the Snake Land, Snake Island, it seems that, on their way, they crossed on the ice during the winter some broad water, which from the language does not appear to have been a river, to which they applied the name "sea."

"Over the water, the frozen sea,  
They went to enjoy it. [Snake Island.]

On the wonderful, slippery water,  
On the stone-hard water they all went,  
On the great sea, the muschel-bearing sea."

There are reasons for believing this refers to a winter of unusual severity as the Shawnee tradition mentioned hereafter claims that the water was rendered solid by the power of their magicians.

Having passed this water they come to the "land of the spruce pines." What water is here alluded to is of course a question difficult to decide satisfactorily. However, I am inclined to the opinion that it was somewhere about Lake Huron, and that Snake Island was in the same locality. The events and movements which follow appear to be explained more consistently with the geography, by supposing that a crossing into the northern end of the lower Michigan peninsula is here alluded to, than by assuming this crossing to have been farther east. They had not yet advanced as far south, or east, as the country of the Tallegea, and hence must have been north and west of Lake Erie.

They come now to the "land of the spruce pines,"—northern part of Michigan\*—where they dwelt for an indefinite period. Here they fought with the *Akowini*, "Snake people" or Snake tribe; a weak people who hid themselves in "the swampy vales," which are by no means uncommon in northern Michigan. Again they decide to move on.

"Snow Bird was Chief; he spoke of the south.  
That our fathers should possess it by scattering abroad.  
Snow Bird went south, White Beaver went east."

This evidently indicates a separation of the tribes, some moving in one direction and some in another, the courses being southward and eastward. The figure (IV, 12 of the Record) shows very plainly that this division was at the "land of pines." Their location at this time appears to be indicated by the following statement:

"The Snake land was at the south; the great Spruce-Pine land was toward the shore;  
To the east was the Fish land, towards the lakes was the Buffalo land."

This seems to apply very well to central Michigan. The Snake land was southward in Indiana or Ohio; the Spruce-pine land was that which they had just abandoned in the northern part of the peninsula; assuming Detroit river to be the Nemesipi (Fish-river), we can readily locate the "Fish-land;" the "Buffalo land," which was "toward the lakes," is descriptive of the prairie region of northern Illinois and northwestern Indiana around the southern end of Lake Michigan.

Snake land was reached, and, after "much warfare south and

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\*Michigan as used herein refers to the lower peninsula unless otherwise explained.

east," full possession was obtained. Here they remained during the reigns of ten chiefs, probably not less than one hundred nor more than two hundred years. Here they first learned the use of maize.

"Shiver-with-cold was Chief, who went south to the corn land.  
After him Corn-Breaker was Chief, who brought about the planting of corn."

This implies of course, that immediately south of them were people who cultivated corn, possibly the Talega, with whom they afterward warred, but more likely some other tribe.

At this point in the narrative there are some puzzling statements difficult to reconcile with each other and with the general trend of the story.

"After him the Salt-man was Chief; after him the Little-One was Chief.  
There was no rain and no corn, so they move further seaward.  
At the place of caves, in the buffalo land, they at last had food, on a pleasant plain."

The mention of "Salt-man," "seaward," and "place of caves in the buffalo land—on a pleasant plain,"—in such close connection, lead to the supposition that they relate to the same period in the migration. It is possible, however, that reference is made to incidents in the history of the different tribes of this family group, which appear at this period of the narrative to have spread themselves over northern Indiana, the eastern portion of Illinois and northwestern border of Ohio, a portion lingering in southern Michigan. As it is legitimate to infer that the Shawnees formed the chief off-shoot going south, it is not straining a point to suppose that the salt springs on Saline river, in southeastern Illinois had been discovered. On the other hand, the figure of the "caves in the buffalo land" (IV. 29) bear a remarkably close resemblance to tents or wigwams. It is noticeable in this connection that in a preceding verse (III, 1) it is said that "the Lenape of the turtle, [turtle clan] were close together, in hollow houses, living together [or in a town] there.

The translator, in the vocabulary under the original word *woliwikgun*, gives the following, "Cane house; *walak*, hole; *walken*, he is digging a hole." The word signifying "a cave" (*waloh*) appears to be derived from the same root. According to Father Zenobius, who accompanied La Salle in his first expedition through Illinois, the Indians in the northern part of what is now this State "made their cabins of mats of flat rushes, sewed together double." Hennepin speaks of the same kind of covering to their cabins, which he says is so well sewed as to be impervious to wind, rain and snow. He says they make their cabins in the form of a tent. These facts taken together, and the symbol referred to, lead to the belief that the word "caves" in this passage of the Record signifies cabins, or wigwams.

That they were still west of the Talega is evident from what follows; hence the statement that they moved "farther seaward" or "eastward, being far from the sea," which is the real meaning, is consistent.

"They settled again on Yellow River, and had much corn on stoneless ground."

It is evident that they, or the main body to whom the tradition especially relates was now moving eastward from the western limits of their route, and was passing over some of the points touched on the westward march. If Dr. Brinton be correct in his supposition that this river is a small stream in northwestern Indiana, a tributary of the Kankakee, there is perfect agreement with the route of the migration so far as we have traced it. His note on the passage is as follows: "*Wisawana*, the Yellow River. There is a small river so called in the state of Indiana, a branch of the Kankakee, called on Hough's 'Map of the Indian Names of Indiana,' *We-tho-gan*, a corruption of *wisawana*. When the Minsi made their first migration west, about 1690, they directed their course to this spot, where they were found by Charlevoix in 1721."

The cause of this eastward movement appears to be explained by the following verses:

"White-Fowl was chief; again there was war north and south.  
The Always-Ready-One was chief; he fought against the Snakes.  
The Strong-Good-One was chief; he fought against the northerners.  
The Lean-One was chief; he fought against the Tawa people.  
The Opossum-like was chief; he fought in sadness,  
And said, 'They are many; let us go together to the east to the sunrise.'  
They separated at Fish River; the lazy ones remained there.  
Cabin-Man was chief; the Tallegwi possessed the east.  
Strong Friend was chief; he desired the eastern land.

They were pressed by foes on both northern and southern flank; their old enemies, the Snakes, again warred upon them. The figures indicate that the "northerners" and "Tawa people" mentioned were on the west, now the rear, of the Lenape. As we have seen above, on leaving the land of the spruce pines, (IV, 12), "Snow Bird went south," and with him probably much the larger body, from whom the Shawnees split off and remained in the southwest when the others retraced their steps toward the east. "White Beaver went east," leading the smaller body and probably stopping along the west bank of the Detroit River and Lake St. Clair. It was toward these, the western band now moved, having determined to proceed toward the east, south of the lakes. Some of the eastern band refused to join them, and "they separated at Fish River, the lazy ones" remaining there, where they had probably found food abundant.

Scarcely had the march toward the east begun before the Talega were encountered.

"Some passed on east; the Talega ruler killed some of them,  
All say in unison, 'war, war.'  
The Talamantan, friends from the north come, and all go together.  
Sharp-One was chief; he was the pipe-bearer beyond the river."

It appears from the language and the figure (IV, 52,) that there was a rubicon here, a river which the Talega (Cherokees) considered a boundary of their territory, whether the Maumee or some other stream farther east or south, can be decided by conjecture only, nor is it important in the present investigation.

This contest with the Talega (Cherokees and Mound-builders of Ohio,) though doubtless long and sanguinary, is told in a few brief lines.

"They rejoiced greatly that they should fight and slay the Talega towns.  
The Stirrer was chief; the Talega towns were too strong.  
The Fire-Builder was chief; they all gave to him many towns.  
The Breaker-in-Pieces was chief; all the Talega go south.  
He-Has-Pleasure was chief; all the people rejoice.  
They stay south of the lakes; the Talamantan friends north of the lakes."

Their confidence in their ability to overcome the Talega appears to have been, at first, a little disappointed, as the towns, for a time resisted their attacks directed by Pimokhasuwi (Stirrer.) The next chief, however, if we may judge by his name, as translated by Dr. Brinton—Tenchekentit (Fire Builder)—used the torch as a more effective weapon. (Dr. Hale translates it "Open-Path.") If we are justified in supposing that the square, circular and other ancient works of Ohio indicate these towns, this would imply that the walls were surmounted by stockades or wood-work of some kind. Be this as it may, the Lenape appear to have been successful, and the Talega were driven south, finding at last a permanent resting place in the mountains of western North Carolina and eastern Tennessee. The Lenape remain south of the lakes and the Talamantans return to their country on the north side. The figure (IV, 61,) appears to refer to a single lake, presumably Lake Erie, and indicates that the Lenape occupied or controlled the entire country south, from end to end. At least the Talamantan symbol stands above (north of) the middle of the lake, and Lenape symbols below (south of) each end.

The friendship which had existed between these two nations was not of long duration.

"When Long-and-Mild was chief; those who were not his friends conspired.  
Truthful-Man was chief; the Talamatans made war.  
Just-and-True was chief; the Talamatans trembled." (Hurons.)

That the Talamatans were the aggressors is apparent from the figures, as the symbol (IV, 62,) shows that they are referred to as those who conspired. As the remainder of the tradition is well known, and has received substantially the same interpretation from authors who have discussed the subject, it is unnecessary for us to follow it further at this time. Moreover we connect

here with the history and tradition of the Cherokees, which have already been briefly referred to. If the interpretation which we have given of this migration legend be substantially correct, our object in referring to it has been accomplished; it proves that the general primary movement of the Algonquians found south of the lakes and east of the Mississippi was south and east, and that the starting point was somewhere north of Lake Superior. Whether along the southern shore of Hudson's Bay, or around Lake Winnipeg or other northwestern lake, is immaterial to the argument.

This northern locality would therefore appear to have been the original home of two of the great families found inhabiting the Atlantic section at the time it was first visited by Europeans. There are other data which tend to strengthen this conclusion, for example, Dr. F. V. Hayden, "Contrib. to Ethnogr. and philol. of the Indians of Missouri Valley," obtained satisfactory evidence that the Blackfeet, an Algonquian tribe living about the headwaters of Missouri river, had migrated thither from the region of the Saskatchewan.

"The traditions of the northern Algonquians do not, according to the native historians, Peter Jones and George Copway, trace their origin farther back than to a comparatively late period, when their ancestors possessed the country which they still hold, north of lakes Huron and Superior." (Dr. H. Hale, *Am. Antiq.*, Vol. V.)

As will be observed by the reader familiar with the subject, we have passed over some important items of the legend without any attempt to explain them. The cosmogony and other portions, which seem to have no direct bearing upon the point at issue, have of course been omitted; there are, however, some other items, a proper explanation of which would throw some light upon the subject. For example, if we could fix the locality of Snake Islands; determine positively who the Snake people, the Tawa, and Stone people were, we would gain thereby some additional landmarks.

"Snake" appears to be used with different applications. When applied to the northern people, the "Snakes," and to "Snake Island," which was near the place where the Lenape crossed to the south side of the lakes, it is possible the Tawas and the Snake place of residence are referred to. This suggestion is based upon the fact that the Tawa people are represented in V. 16 by a serpent; and that the termination *ako* of the name Towakon (Towaka) signifies "snake." Dr. Brinton says it refers to the Ottawas, called by the Delawares "Taway." The ancient dwelling place of this tribe was in all probability about Lake Huron, on Manitouline Island. It is stated in the Jesuit Relation for 1667, "The ancient dwelling place of the Ottawas was a portion of Lake Huron, from which they were driven by the fear of the

Iroquois, carrying with them the love of their native country." Perrot says that this island was called "*L'isle des Outaouas*," which the commentator affirms was the primitive residence of his people. Shea, in a note to Charlevoix, "History New France," says: "The Ottawas, a small tribe allied to the Outchpoues, or Ojibways, always resided west of the Hurons. They are first called Andatahouat (Sagard); Ondatauauat (Bressani); Ondataouatouat (Relation 1654)—a Huron term, perhaps from *andata*, wood, and equivalent to Gens des Bois. Du Creux, in his map, places them on Manitouline Island, as do Champlain, Bressani and the Relation, 1671." The idea that their primary home was on Ottawa river is successfully combatted by Shea. There is nothing unreasonable in supposing that the Ottawas had preceded the Lenape, and with the Chippewas had taken up their abode on the shores and islands of Lake Huron. This will serve to explain how the Lenape became aware of the existence of Snake Island. This supposition of course implies intimacy between the two tribes. There seem to be hints of dissension in the mythological portion of the legend.

If the explanation given be substantially correct, the general lines of migration of the other members of the stock from this northern hive to their historic seats can readily be surmised. However, as the movements of some of these are important we will refer to them.

## AN ANALYSIS OF THE DAY SIGNS IN THE PAL- ENQUEN INSCRIPTIONS.

BY LEWIS WINTERS GUNCKEL.

In a former article in this magazine we described the occurrences and variations of the numeral prefixes and superfixes, which occur so frequently in the katunes or cartouches of the mural inscriptions of the Mayas. A close examination of these graven texts will show that the numerals are generally affixed to the signs or glyphs for the various days of the Maya calendar. As Prof. Valentini justly says: "The numerals are their conspicuous monitors, and the symbols affixed to them invite to the certain belief that we stand in the presence of a day's date."<sup>1</sup> This indefatigable student has expressed his opinion in his valuable researches, that the written symbols are plainly nothing else than tachographs, which show on their faces, the traces of abbreviated,

(1) "Analysis of the Pictorial Texts Inscribed on Two Palenque Tablets," by Phillip J. Valentini, pub. by the American Antiquarian Society, Worcester, Mass., 1895, Part I, p. 5.



degenerated images,<sup>2</sup> which suggest the pre-existence of a prototype; and that these prototypes can be detected in the sculptures and that they then represent the image of a distinct object, which can be demonstrated to be of some ritual nature. He further claims that the method of recording both on paper and stone was not alphabetic, syllabic or intermixed but object and picture writing. How unfortunate it is that the students of this subject differ so radically on such a primary, important point. Dr. Seler,<sup>1</sup> Dr. Förstemann,<sup>3</sup> and Dr. Schellhas<sup>4</sup> hold that the Mayan hieroglyphs are mainly or wholly ideographic; while the Abbe Brasseur,<sup>5</sup> de Charencey,<sup>6</sup> de Rosny,<sup>7</sup> Prof. Cyrus Thomas,<sup>8</sup> Dr. Le Plongeon,<sup>9</sup> Dr. Cresson<sup>10</sup> and others, consider them to a great extent phonetic. An intermediate position has been upheld by Dr. Brinton<sup>10</sup> who believes that while they are chiefly ideographic, they are also occasionally phonetic, in the same manner as in the Aztec picture writings.

Bishop Landa's signs for the twenty days which occur so frequently in the ancient Mayas Codices are supposed by many students to have been reproduced in *fac simile* on the graven texts of the mural inscriptions, and many writers have pointed out certain resemblances of the day signs in the codices to those on the sculptures, such as *Imix*, *Chuen*, *Ezanab*, etc. Prof. Valentini has pursued this investigation further than any predecessor, and the results obtained are of inestimable value to the student. We fully believe that every additional point of evidence in this abstruse and complicated study will be of value to the future investigator; and there is little doubt, but that the ultimate results of untiring and long continued analysis of these glyph forms, will culminate in a broader and more comprehensive understanding of these hitherto mysterious hieroglyphic inscriptions. Many students are of the opinion that the signs for

(2) Ibid. p. 5.

(1) The articles of Dr. Seler and also of Dr. Schellhas can be found in the various numbers of the Berlin ZEITSCHRIFT FÜR ETHNOLOGIE 1886-1886.

(2) Dr. Förstemann ZUR ENTZIFFERUNG DER MAYA HAND-SCHRIFTEN, Parts I, II, III and IV.

(3) Same as in note 1.

(4) Abbe Brasseur in Introduction to the Codex Troano, published by the French government, 1869.

(5) De Charencey, in his RECHERCHES SUR LE CODEX TROANO, Paris, 1876.

(6) Leon de Rosney his in ESSAI SUR LE DECHIFFREMENT DE L'ECRITURE HIERATIQUE DE L'AMERIQUE CENTRALE, folio, Paris, 1876.

(7) Prof. Cyrus Thomas in his article in the AMERICAN ANTHROPOLOGIST for July, 1893 Washington, D. C.; also AM. ANTON.

(8) Dr. Le Plongeon's "Alphabet" may be found in the supplement to the Scientific American, N. Y., January, 1885, and in his "Sacred Mysteries Among the Mayas and Quiches."

(9) Dr. Cresson's article is in "Science," N. Y., Aug. 19, 1892.

(10) D. G. Brinton, "Primer of Mayan Hieroglyphics," pub. by the Univ. of Penna. 1896, p. 13.

the days are oftentimes to be looked upon as rebuses, and that they do not tell us the name given the day. When used in this way they believe that they are merely the picture of some familiar visible object, whose name is somewhat similar to the name of the day, and which recalls it to the mind. Therefore it is essential to discriminate between those used in their calendar significance, and those used as rebuses. The glyphs of the various days occur quite frequently on the tablets, monuments and mural inscriptions; so often in fact, as to make one infer that they must be chronological or calendar records of some kind. Some day signs occur many times in each inscription, while others are found very seldom, and in an abbreviated or changed form. They are almost always accompanied by numeral prefixes, composed of bars and dots at the left side of each glyph. Some also have numeral superfixes, and others have both forms of numerals attached to the same glyphs; or in other words, have a double set of numerals, as with *Chuen* and sometimes *Ahau*.

It has been the subject of much discussion as to the exact meaning of these double sets of numerals, and the proper interpretation of them, is yet to be demonstrated. Prof. Thomas was of the opinion, that, when the character or symbol of a day has numeral prefixes at the side only, that these denote the number of the day, as they never exceed thirteen. The numerals on the top of the characters in the mural inscriptions, he believed corresponded with the red numerals in the manuscript. Where the character is the symbol of a day, and has numerals, both at the side and also on top; those at the side he considered as referring to the number of the month, as they never exceed eighteen.<sup>1</sup>

Prof. Valentini explains the numeral superfixes on the cartouches, as copal balls of various ingredients; and tablets ("tablillas") perscribed by the ancient priests, which were intended to be cast into the brazier, as described by Landa on pages 148 and 250. One fact is certain, that the same style of ornamentation by loops on each side of the numeral one, two, six, or eleven, is found, with a few exceptions, both in the prefixes and superfixes on the graven texts. Therefore, if the same rules for general arrangement of ornamentation of the bars and dots, is used for the superfixes, does it not follow that there is in consequence, a certain relationship and affinity to those used as prefixes; and if the latter are numeral signs, the former also must have some numeral significance?

(1) "A Study of the Manuscript Troano," by Cyrus Thomas, Washington, D. C., 1882, pp. 202-3.

Most of these researches have been confined to the Palenque Tablet of the Cross, but we propose to continue them through a wider field, taking for the present, the five Palenquean tablets. For convenience in collecting the glyphs, we will use the method adopted by Chas. Rau, and afterward used by Prof. Valentini, for locating the characters in each tablet. For instance in Tablet I,\* we have the central picture, containing the sacred tree of life, which is surrounded by figures, cartouches, and decorative forms; and on each side, the lateral tablets, which are each divided into six vertical columns, and these columns into seventeen transversal rows, forming a regular series of cartouches, with the exception of the initial glyph which occupies the space of four of the regular size, and the row of double characters immediately underneath it. Suppose we letter and number each tablet, lettering the top of each column of glyphs, beginning at upper left-hand corner, A, B, C, etc.; and then numbering down the transversal rows at the left side, starting at the upper left-hand corner, with 1, 2, 3, and so on, to 17, for each row of glyphs. Hence the glyph C 3 would be the third character down the C column; and the glyph F 5 the fifth character down the F column. This same method I have used in studying all the mural inscriptions, and when referring to a glyph such as D 4, Tablet I, I would mean the fourth character down the D column on the "Tablet of the Cross" at Palenque. For convenience and to save time, I have numbered the various Palenquean mural inscriptions as follows:

Tablet I—The Palenque "Tablet of the Cross."\*

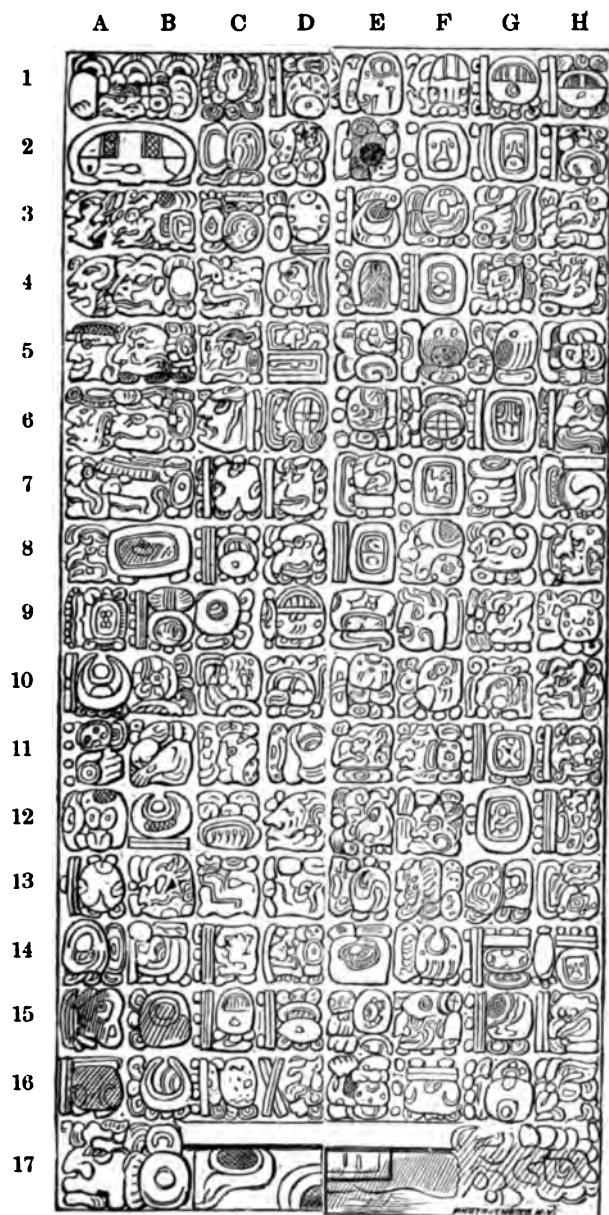
Tablet II—The "Tablet of the Inner Wall of Casa." No. 3 frontispiece to Vol. II, in John L. Stephen's "Incidents of Travel in Central America," etc. N. Y. 1855.

Tablet III—Outer Corridor of No. 1, Casas de Piedra, Palenque. Right hand side Tablet No. III, facing page 342, Vol. II, Stephen's "Incidents," etc.

Tablet IV—Tablet on Inner Wall of Casas No. 1. Vol. I, Stephen's "Incidents," etc., facing page 345.

Tablet V—Outer Corridor of No. 1, Casas de Piedra, Palenque. Left hand side No. II, facing page 342, Vol. I, Stephen's "Incidents," etc.†

(\*) For plates showing the whole inscription, including the two tablets, one on each side of the central figures, see plate presented in "The Palenque Tablet," by Chas. Rau, or the plate in "A Study of the Manuscript Troano," by Cyrus Thomas, p. 201. Prof. Valentini also presents an admirable plate as frontispiece to his "Analysis of the Pictorial Text Inscribed on Two Palenque Tablets," Part I. Worcester, Mass., 1895.  
†Tablet I will be found in our Vol. XIX, No. 1, Jan. '97; Tablet II in No. 2, March; and Tablets III, IV and V in following Nos. The reader will be curious to know whether any heads or faces of the gods or any symbols of the elements or the points of the compass can be found in the glyphs on the tablets, outside of the central pictographs.—Ed.



TABLET II.—THE “TABLET OF THE INNER HALL OF CASA.” NO. 3.



For the purpose of showing the resemblance and affinities of the written symbols in the Mayan codices to those figured in the sculptured inscriptions, I have prepared two diagrams (see Plate I and II) in which are placed some two or three forms from the codices, followed by a few examples of each corresponding day sign taken from the graven texts.

1. The sign for *Kan* can be readily distinguished in the graven texts, although it does not occur with great frequency.

It is found four times in Tablet I, in T 8, U 17, X 10, and T 2; once in Tablet II, in E 1; three times in Tablet III, in Q 3, D 8, and B 7; once in Tablet IV, in A 7; and twice in Tablet V, in E 11, and G 4; with a total number of occurrences in the five tablets of eleven times. It is almost invariably accompanied by numerals as prefixes, but in none of the day signs except *en* and sometimes *Ahau*, do we find the numeral superfixes.

The following diversified interpretations are given for the sign *Kan*. Dr. Seler thinks that it represents an eye; Dr. Brasseur has a grain of maize; and Brasseur a tooth. Prof. Cyrus Thomas believed that it was used not only to denote bread, (*tortillas*,) but that in the pictorial portion of the codices, it was also frequently given to represent corn, (maize.)<sup>1</sup> Prof. Valentini says that the word *Kan* in Mayan, has among other meanings "that of *yellow* and under given circumstances, that of *the yellow ripened maize*. It is only in this condition that the kernel represented in the picture, is available for preparing the *tortilla*. The part stands for the whole. The kernel at its top shows heart and rim with which it is fastened in the cob; the furrows or folds, as signs of the hardening of the kernel, are indicated by the downward running strokes."<sup>2</sup>

Berendt identified it as a polished stone, shell pendant or bead; and Dr. Brinton accepts this interpretation, holding that it was their circulating medium, and stands for money, and that all that the word conveys—food, prosperity, abundance; and that the dot, or eye, in the upper portion, is the perforation by which it was strung on a cord.<sup>3</sup>

In Plate I, Figs. 1, 2 and 3, are taken from the Codices; Fig. 4 is found in T 8, Tablet I; Fig. 5, in U 17, Tablet I; Fig. 6, in X 10, Tablet I; and Fig. 7 is found in Tablet III, in D, 8. These are all remarkable resemblances, and are depicted in the inscriptions with much regularity and exactness.

2. *Chiccan*. This sign does not occur often in the mural inscriptions, but wherever it is found it contains the wavy lines for the interior designs. We find none in Tablet I;

<sup>1</sup> "A Study of the Manuscript Troana," by Cyrus Thomas, Washington, D. C., 1882, p.

<sup>2</sup> "Analysis of the Pictorial Text Inscribed on Two Palenque Tablets," by Philip J. Valentini, published by the American Antiquarian Society, Worcester, Mass., 1893, p. 18.

<sup>3</sup> "A Primer of Mayan Hieroglyphics," by D. G. Brinton, published by the University of Pennsylvania, 1896, p. 110.

one in Tablet II, in K 3; three in Tablet III, in F 11; T 10; and T 12; once in Tablet IV, in E 9; and twice in Tablet V, in K 9 and K 12, making a total for the five Palenque tablets of seven times. We differ from Prof. Valentini on this point. He assigns the glyph which we interpret as *Cauac*, for this sign *Chiccan*. Perhaps we are both wrong, for the opportunities for comparison are but few, and the resemblances are far from what should be desired.

In Plate III, Figs. 9, 10, 11, 12 and 13 are taken from the codices; and the remaining four are from mural inscriptions. It will be readily noticed that the latter have not the slightest resemblance to the Figs. 9, 10, 11 and 12, but that they resemble to a great extent the variant Fig. 13, in the wavy lines across the centre. Fig. 14 is found in Tablet IV, in E 9; Fig. 15 in Tablet V, in K 9; and Fig. 16 in Tablet III, in F 11.

3. *Cimi*. This sign we can only find once in Tablet I, and while it does not exactly correspond with Landa's sign the resemblance is very close, and a diligent search of all the tablets failed to bring any better result, or any further occurrences for *Cimi*.

The sign in the center of the variant in Plate III, Fig. 19, cannot be found in the mural inscriptions. Figs. 17, 18 and 19 in Plate III are taken from the codices. Fig. 20, the only one occurring in the graven inscriptions, is found in S 4, in Tablet I.

4. *Manik*. This sign was first interpreted by Brasseur as a hand in the act of grasping. The sign appears in the graven texts in the form of a variant, and although the symbol of the hand occurs frequently in the tablets, we cannot associate them with this sign.

The variants are of the style shown in Plate I, Figs. 26 to 32. It is found four times in Tablet I, in A 13, B 13, C 4, U 5; five times in Tablet II, B 12, A 10, B 16, O 13, I 3; and five times in Tablets IV, in D 6, A 7, A 8, C 10 and I 10; but does not occur in Tablets III and V. Fig. 25 in Plate III is taken from the codices; Fig. 26 is A 10, Tablet II; Fig. 27 is A 13, Tablet I; Fig. 28 is C 4, Tablet I; Fig. 29 is B 12, in Tablet II; Fig. 30 is B 13, in Tablet I; Figs. 31 and 32 are M 14, and I 3, in Tablet II.

The signs for *Manik* in the inscriptions, can be readily distinguished by their peculiar design.

5. *Lamat*. The sign for this month somewhat resembles a few of the *Kin* signs, and show the sun partly below the line or horizon. These signs are found in the graven texts, greatly resembling those of the codices, as reference to Plate I, Figs. 33 to 39 will show.

*Lamat* is found once in Tablet I, in S 10; three times in Tablet III, in H 6, H 10, and E 6; but cannot be found in the other three tablets.

We present the various forms of *Lamat*, taken from the codices in Plate III, Figs. 33, 34, 35 and 36. Fig. 37 is from Tablet III, in H 6; Fig. 38 is S 10, in Tablet I; and Fig. 39 is H 10, in Tablet III.

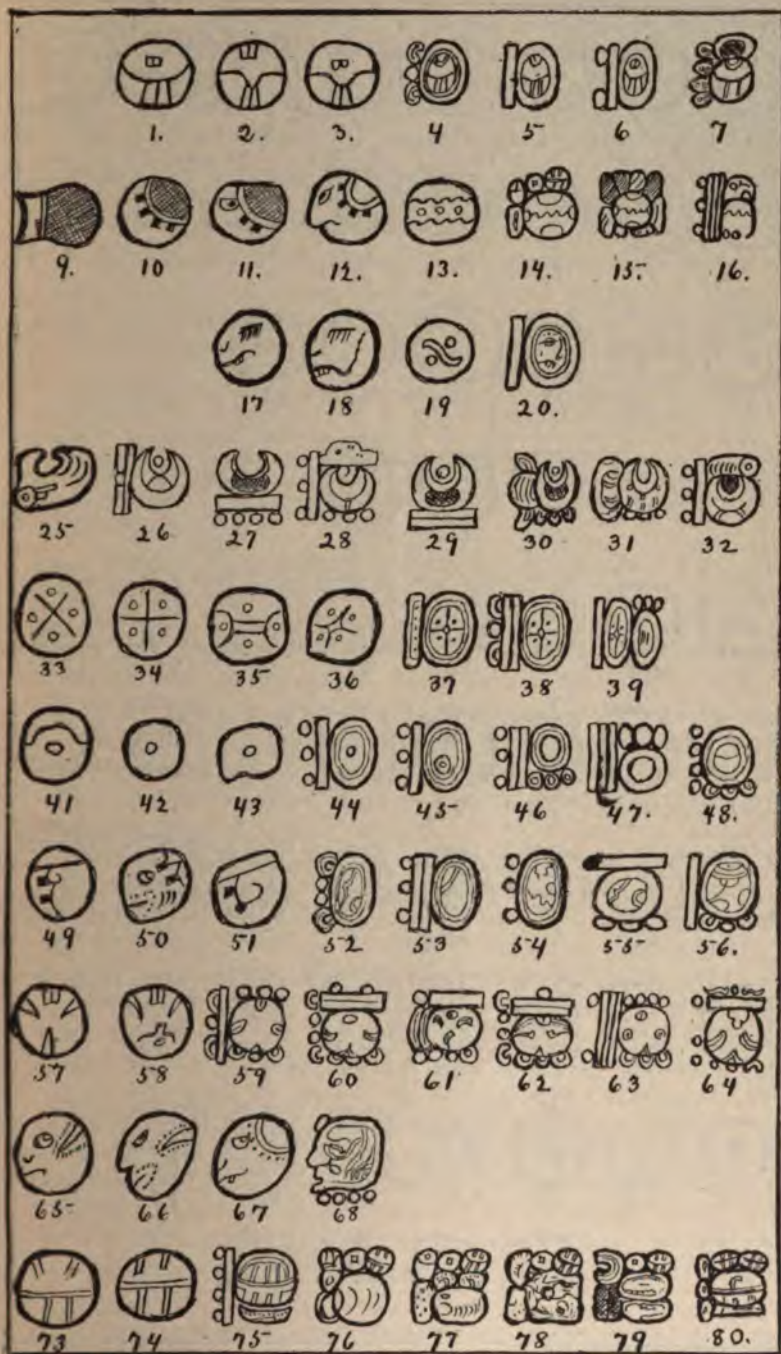


Plate I.



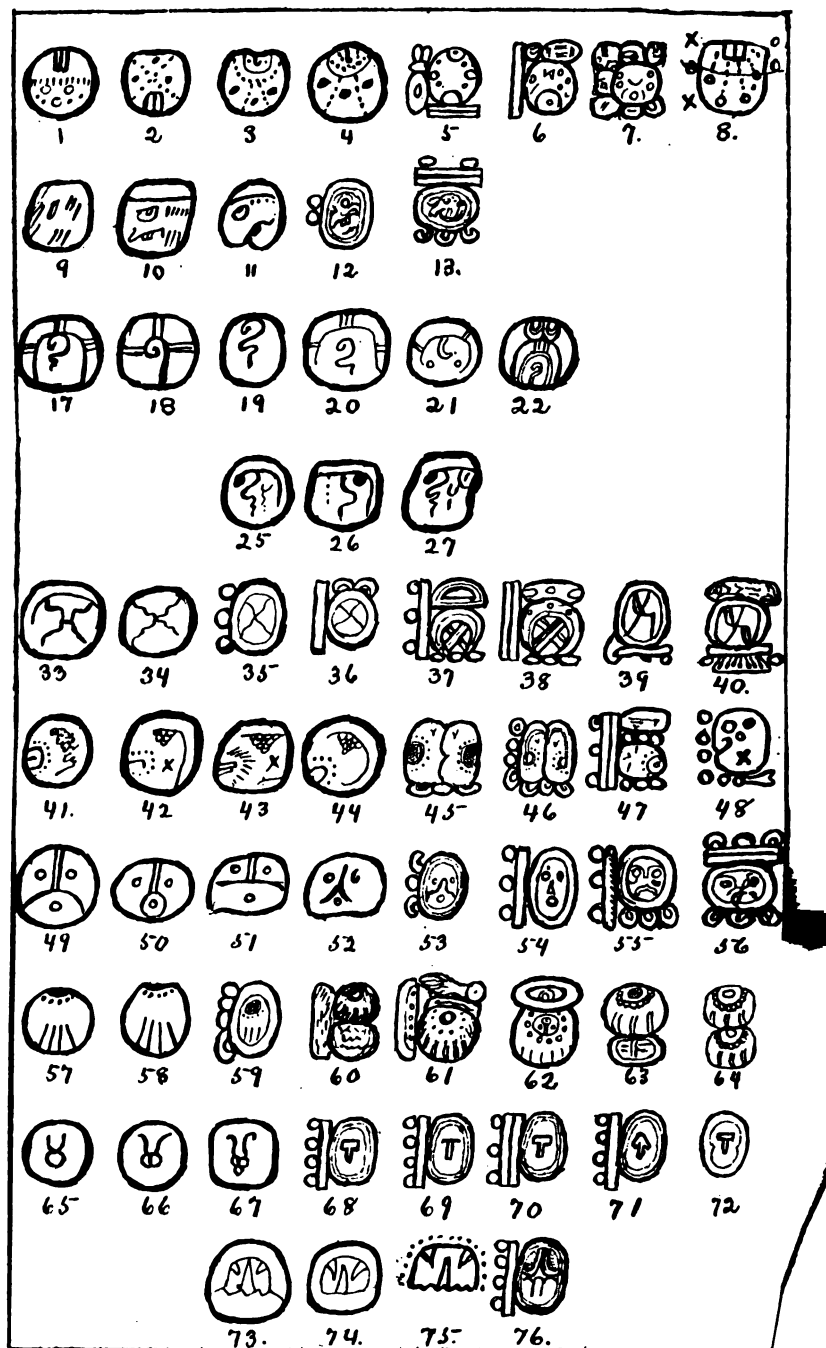


Plate II.

6. *Muluc*. This sign occurs in the five Palenque tablets twenty-two times, not including some doubtful ones.

It is found in Tablet I three times, E 17, U 10, and N 1; in Tablet II three times, C 9, B 15, F 1; in Tablet III seven times, C 1, H 1, R 1, E 5, E 3, O 4, Q 2; in Tablet IV four times, in C 2, E 3, K 3, and L 9, and in Tablet V five times, in H 1, G 8, G 9, C 10 and D 1. In Plate 1, Figs. 41, 42 and 43 are taken from the codices. Fig. 44 is found in O 1, in Tablet I; Fig. 45 is found in E 3, Tablet III; Fig. 46 in C 10, Tablet V; Fig. 47 is found in B 1, in the small Copan Tablet described by Stephens.<sup>1</sup>

7. *Oc*. Brasseur, and later, Seler, considered this sign to portray the ears of a dog, as the word *Oc* stand for dog in some of the Maya dialects. This word also means a "trail," or "foot prints," of which the sign bears some resemblance.

The sign for *Oc* is found in the various tablets as follows: In Tablet I, four times, in G 1, R 14, S 2 (?), U 12; once in Tablet II, in M 7; once in Tablet III, in K 11; but it does not occur in the other tablets. In Plate I, Figs. 49, 50, and 51 are taken from the codices; Fig. 52 is found in S 14, in Tablet I; Fig. 53 in G 1, Fig. 54 in M 7, Tablet II; Fig. 55 in A 1, in small Copan Tablet, described by Stephens; Fig. 56 is found in the inscription on a Tablet from Tonina, Chiapas.

8. *Chucn*. This sign is supposed to represent a mouth. Dr. Valentini thinks that *Chucn*, as it shows the rounded form, and is posted on three feet, represents an earthen vessel, and judging from the three thorns which are represented on its surface, he believes it is the vessel in which the thorns with which the penitents had drawn blood from their bodies, were preserved, which thorns, on a later occasion, were solemnly burnt by the priest designated to this ritual function. Piles of *Chucn* are found in the codices as offerings (Cod. Dres., pp. 26, 42; Cod. Cort., p. 3) to which Dr. Brinton suggests the meaning of first fruits. Variants of *Chucn* occur more frequently on the mural inscriptions than any other day sign. The above authority believes that they generally stand for *Chun*, which means "the foundation, the beginning, the first, the cause," and he holds that in many inscriptions the position of *Chucn* is antithetic to the *Pax*, the one indicating the beginning, and the other the end, of a series. This glyph is one of the most important ones in the mural inscriptions, both on account of its constant occurrence, and also on account of the peculiar arrangement of numeral dots and bars, used both as prefixes and superfixes; both of which are invariably found on the same glyph, rendering the interpretation difficult. After examining carefully thirty-five *Chucn* glyphs in the various mural inscriptions, we do not find one instance where the prefix and superfix numeral signs

(1) "Incidents of Travel in Central America, Chiapas and Yucatan," by John L. Stephens, Vol. II, p. 454.

do not occur. Two glyphs, somewhat resembling *Chuen* are found in the Tablet of the Cross, on the left side, which are both joined to the heads of deities, or rather have the heads as prefixes. In these two instances only, the *Chuen* glyphs have no numeral signs whatever. The numeral signs at the left used as prefix seem to run from the ornamented numeral one, ornamented two, regular three, four, five; ornamented six; regular seven, eight, nine, ten; ornamented eleven; regular twelve, thirteen, fourteen, fifteen; ornamented sixteen, and regular seventeen, eighteen and nineteen. With the extra set of numeral signs as superfixes, the highest numeral sign found on a *Chuen* glyph was *thirteen*. Intermediate numeral superfixes are found commonly having ornamented forms for one, two, six, and eleven, and the regular forms for the other numerals up as high as thirteen. This glyph occurs frequently in the inscriptions, some of which are as follows:

Tablet I, B 6, D 1, D 5, D 13, etc.; in Tablet II, in C 7, A 13, N 14, and M 16; in Tablet III, in P 2, E 7, G 12, etc.; in Tablet IV, in D 5, M 7; and in Tablet V, in G 11, K 9, and E 9. In Plate I, Figs. 57 and 58 are taken from codices; Fig. 59 is C 7 in Tablet II; Fig. 60 is E 10, Tablet I; Fig. 61 in D 1, Tablet I; Fig. 62 is E 5, Tablet I; Fig. 63 is W 1, Tablet I; and Fig. 64 is taken from the inscription on a tablet from Tonina, Chiapas.<sup>1</sup> The total number of occurrences in the five tablets is thirty-six as follows: Tablet I, nineteen times; Tablet II, four; Tablet III, eight; Tablet IV, twice; and in Tablet V, three times.

9. *Eb*. This sign represents the face of an old man, with a peculiar mark on the ear; sometimes sharply pointed, and sometimes semi-circular and surrounded by dots. The glyph D 8, Tablet IV, resembles this sign more closely than any other which we have found.

In Plate 1, Figs. 65 to 67 are taken from the codices. Fig. 68 is taken from an inscription on a monolith at Quirigua, figured by Mr. A. P. Maudslayi. The glyph for the day *Eb* is a very uncommon one on these inscriptions and we are unable to find even one instance on the five Palenquean tablets.

10. *Ben*. We differ from Prof. Valentini in his choice for the glyph for this day. He calls the month sign *Pax*, the day sign *Ben*. He says that "that there are many grave reasons why the notation of months as well as the appearance of any qualified symbol for a month on these tablets as well as in the codices, must be denied." We cannot, however, reconcile ourselves to assign this value to the *P*.

(1) Figure 1 by Dr. D. G. Brinton in his "Primer of Mayan Hieroglyphics," published by University of Pennsylvania, p. 139.  
(1) "An Analysis of the Pictorial Text Inscribed on Two Palenque Tablets," by Philip J. J. Valentini, Part I, p. 18.

sign when we have the veritable *Ben* sign before us in conspicuous positions in the tablets.

Moreover some of the month signs certainly do occur in the mural inscriptions and codices, and have frequently been pointed out by Dr. Chas. Rau;<sup>1</sup> Prof. Cyrus Thomas<sup>2</sup> Dr. Brinton,<sup>3</sup> M. H. Saville,<sup>4</sup> Dr. E. Förstemann, and others. Lack of space will prevent us from going into this subject in detail now, which, however, we hope to bring forth to greater advantage at some future date. The sign for *Ben* is often found in composite form; or associated with other glyph accessories; and is often found in conjunction with the "wind cross sign." Brasseur believed that this sign represented the showing of a path, while Dr. Seler thought that it represented a mat, or a straw roof. Dr. Brinton says that it represents a wooden bridge, the two supports of which are shown, and which was sometimes covered with a straw mat.

It is found four times in Tablet I, in R 1, R 15, D 10, and R 10; two doubtful forms are found in Tablet II, in E 1, and M 1; and one is found in Tablet III, in B 10; four are found in Tablet IV, in E 9, G 10, G 8, and G 9; and five in Tablet V, in H 5, D 8, M 8, H 12, and K 11.

In Plate 1, Figs. 73 and 74 are taken from codices; Fig. 75 is found in G 10, Tablet IV; Fig. 77 is T 9, Tablet I; Fig. 78 is R 15, Tablet I; Fig. 79 is R 10, Tablet I; Fig. 80 is M 8, in Tablet IV.

This combination of the *Ben* and *Ik* signs as a superfix reminds one forcibly of the monogram for *Kin ich*, "The Sun God", on which it is usually used as a superfix to *Kin*, the sign for the sun, with the altar postfix. This *Ben-ik* superfix is found frequently both in the codices and inscriptions.

11. *Ix*. This sign almost always contains a number of black dots. It, however, does not occur often in the inscriptions. The glyph having the greatest resemblance to the ones found in the codices, occurs in the Inscription of *Kabah*, Central Yucatan. It also occurs once in B 11, in Copan statue facing page 158, No. 2, in Vol. I, Stephen's "Incidents of Travel," etc.

It is also found once in Tablet I, in Q 1; three times in Tablet II, in D 1, D 3, and O 9; but is not found in the other two tablets.

(1) "The Palenque Tablet," by Chas. Rau, Smithsonian Institution, 1879, p. 63-4.

(2) "A Study of the Manuscript Troano," by Cyrus Thomas, Washington, D. C., 1882, p. 255.

(3) "A Primer of Mayan Hieroglyphs," by D. G. Brinton, pub. by the Univ. of Penna., Series in Phil. Lit. and Arch., Vol. III, No. 2. See pages 136, 137, 138, 139, 140.

(4) "A Comparative Study of the Graven Glyphs of Copan and Quirigua," by Marshall H. Saville, in Journal of American Folk Lore, July-September, 1894. In this article Mr. Saville pays particular attention to an analysis of the various Pax signs found in the mural inscriptions.

(5) ERLAUTERUNGEN ZUR MAYA HANDSCHRIFT DER KÖNIGLICHEN OFFENTLICHEN BIBLIOTHEK ZU DRESDEN, by Dr. E. Förstemann, Dresden, 1886, pages 9-12.

In Plate I, Figs. 1, 2, 3, and 4, are taken from the codices; Fig. 5 is D 1, Tablet II; Fig. 6 is D 1, Tablet II; Fig. 7 is O 9, Tablet III; Fig. 8 is taken from the inscription of *Kabih*, in Central Yucatan.

12. *Men*. Evidently the head of an aged person, whom both Seler and Brasseur believe to be Mother Earth. Sometimes it is changed into a worm-like shape in the codices.

In Plate I, Figs. 9, 10, and 11, are taken from the codices; Fig. 12 is the only instance we can find on the mural inscriptions, and is found in Table II, in N 12; Fig. 13 is figured by Maudsley, and somewhat resembles it.

13. *Cib*. The inside spiral in this sign is believed by both Brasseur and Seler to represent the fermented liquor. *Ci* trickling down. Dr. Brinton thinks that the "pottery decoration" certainly indicates a jar or vase, which gives strength to this identification.

In Plate II, Figs. 17 to 21, are examples from the codices; Fig. 22 is the only one found on the mural inscriptions and occurs in G 7, Tablet IV.

14. *Caban*. This sign contains the figure of the "cork-screw curl" which was worn by the women, and stands for *cab*. We have no record of finding this glyph in any of the tablets.

15. *Ezanab*. This sign is the representation of the sacrificial knife of flint, which also closely corresponds with the name. This day sign occurs quite frequently on the mural inscriptions as follows:

Tablet I, in M 1, U 7; in Tablet II it does not occur; in Tablet III, in D 1, D 7, H 11, G 6, and L 11; in Tablet V, in G 9; also in No. 2, top figure, and No. 2, lower figure, of the glyphs on the front of colossal bas reliefs on east side of principal court of Palace at Palenque.

The forms of *Ezanab* shown in Plate II, Figs. 39 and 40 are found frequently at Copan. It occurs conspicuously on the Hieroglyphic Stairway near the pedestal at the base, on the western side of mound 26, Copan, Honduras. The forms shown in Figs. 37 and 38, Plate II, are found more frequently at Palenque, and appear in a prominent part of the inscription on the colossal bas reliefs in stone at that place.

In Plate II, Figs. 33 and 34 are of *Ezanab*, taken from the codices; Fig. 35 is found in U 7, in Tablet I; and Fig. 36 occurs in the same tablet, in M 1. Fig. 37 is D 1, Tablet III; Fig. 38 is H 11, Tablet III; Figs. 39 and 40 are variants, and occur often in some localities. This variant can be found twice on the inscription on the Tablet from Tonina, Chiapas, and at other points.

16. *Cauac*. Opinion seems to differ very considerably regarding the interpretation of this sign. Dr. Seler thinks that it contains the hairy mouth of the *Moan* bird and Dr. Brinton was of the opinion that it represents a side face with pendant clouds for the eye, and the "windcross" sign for the ear. In direct contrast to these views, Prof. Cyrus Thomas believes

to be the "sign for wood" and Rosny thought it to be the sign of a building. Prof. Valentini believes that it has reference to honey, claiming that all Maya words beginning with the syllable *Cab* always have this meaning. He recognizes the sculptured cartouche C 8, and also in C 16, in Tablet I, an image of a honey comb graven on the centre of a shield, above which, for closer definition, the body of a bee is placed. The resemblance is very noticeable in the illustration of the tablet presented with this article, but on referring to Catherod's drawings as presented in Dr. Chas. Rau's work, the two above mentioned glyphs, seem to have a very different meaning; leaving us in doubt as to which form is correct. The meaning which the other students call "pendant clouds," he holds to be the sign for the honey comb. In the inscription from Yabah, in Central Yucatan, the *Cauac* day sign appears once in a form resembling to a great extent, those signs found so frequently in the manuscripts. It has the "windcross" sign for the ear, and the pendant clouds for the eye. The mouth, however, lacks the dots, as in the hairy mouth of the *can* bird. (See Fig. 48, Plate II.) We find on this day sign in the tablets the regular numeral prefixes, but no superfixes.

In Plate II, Figs. 41 to 44, are forms of *Cauac* taken from the codices, Fig. 45 is found in B 3, Tablet I; Fig. 46, in F 6, Tablet I; Fig. 47, in X 14; Fig. 48 is taken from the inscription of Kabah, from Central Yucatan.

The day sign *Cauac* is found in the inscriptions as follows:

Four times in Tablet I, in B 2, C 5, F 6, U 2; in Tablet II once, in C 16; once in Tablet III, in J 2, and J 11; and once in Tablet V, in I 6. It does not occur in Tablet IV. This makes a total of eight times. The sign for *ac* sometimes occurs in the inscriptions in groups or piles forming one cartouche, just as we find piles of *Imix* in the codices, used as offerings.

7. *Ahau*. Always represented by the drawing of a full man. The word *Ahau* in Maya, means old man chief. This sign occurs frequently in the mural inscriptions, and generally with numeral prefixes, both of ornamental and regular forms. This day sign, together with the sign for *Chuen*, are the only two signs we have found having a double set of numerals. It occurs more frequently on *Chuen* than on *Ahau*. Only two instances are found in the Palenquean series, where *Ahau* has numeral superfixes. Once where it has the numeral eight, and the other time the numeral thirteen, above the day sign. We find the day sign *Ahau* in the various inscriptions as follows:

In Tablet I five times, in A 16, D 3, B 8, T 17, and U 10; in Tablet II three times, in N 2, M 2, M 5, G 2, K 2; in Tablet III five times, in Q 6, E 8, L 8, and C 11; in Tablet IV, five times, in M 1, G 1, A 2, L 4, and I 6;

and in Tablet V once, in H 10. It also is found twice on the small Copan tablet described by Stephens, and is found frequently on all the inscriptions of that neighborhood. The sign for the day *Ahau* occurs often in a compound form, as in A 8, B 8, in Tablet I; in Tablet II, in J 2, K 2; in Tablet IV, in A 6, B 6; and we find it again in B 1, and in L 2, on the inscription at Chicken-Itza, as figured by Stephens, and it is also found sometimes in the graven texts, reversed or upside down in the center of the sign for *Imix*, making a peculiar combination, of which we can at this time offer no explanation. This form is found almost always in the neighborhood of Copan.

In Plate II, Figs. 49 to 52 are forms of *Ahau*, taken from the codices. Fig. 53 is A 16, Tablet I; Fig. 55 is T 17, Tablet I; Figs. 55 and 56 are from the small Copan tablet described by Stephens, in B 3 and D 6.

18. *Imix*. Many students consider this sign as a representation of the mammary gland, but Dr. Brinton claims that it is not like those shown in the codices, and that it is typical of prosperity, and is often attached to the *Kan* sign; and when in the calendar, it indicated the beginning of a time period. In the mural inscriptions it is found frequently, and in some cases, as at Copan, it contains a small *Ahau* sign, placed upside down, in the center of *Katum*. This was first pointed out by Mr. M. H. Saville, and since then we have found several other instances of this peculiar combination, the exact meaning of which is difficult to determine. (See Fig. 61, Plate II). The following occurrences of *Imix* are noted in the tablets.

In Tablet I, three times, in E 2, D 6, X 5; in Tablet II, twice, in L 10, N 5; in Tablet III it does not occur; in Tablet IV, once, in K 1; in Tablet V, once, in A 8.

In our Plate II, Figs. 57 and 58, are forms of *Imix* taken from the codices; Fig. 59 is X 5, Tablet I; Fig. 60 is G 8, Tablet V; Fig. 62, which contains the inverted *Ahau* sign, is from Copan, Honduras. Fig. 61 is E 2, Tablet I; Figs. 63 and 64 are taken from inscriptions on the stelæ at Copan.

19. *Ik*. According to Dr. Brinton, the sign for this month is a katun inclosing the sign of the four directions or four winds, the "windcross." This is a good interpretation, for the word itself means air, wind, breath, life, etc. There is also a very distinct corroboration of this interpretation found in the general form for this day sign in the graven texts.

For we find in the inscriptions, inside of the katun, the "windcross" sign, shown on Plate I, Figs. 65, 66 and 67, replaced by the *Tau* shaped sign, as seen in Plate I, Figs. 68 to 71. It is thus shaped in the primitive form of the cross, by which the ancient Mayas represented the directions of the four winds.

Brasseur thought that this sign represented a flower, as it is sometimes shown with forms resembling leaves, emerging from it in the codices, which he supposed would indicate the spirit of life coming forth.

We present the day sign *Ik* in Plate I. Figures 65, 66 and 67 are forms taken from the codices. The four following ones are found in Tablet I as

**Follows:** F 12, E 1, C 9 and E 9. It is found once in Tablet II, in H 2; and once in Tablet III, in G 7, but is not found in the other two tablets.

20. *Akbal*. Both Brasseur and Seler thought that this sign represents a mouth. Other authorities have suggested that it represents the rays of the sun after sinking below the horizon, claiming that the name *Akbal* resembles *Akab*, meaning night, and that the glyph itself generally has that significance, night or darkness. It occurs very seldom indeed in the mural inscriptions, as we can only find one instance, in Tablet II, in p. 6. It shows a slight variation from the tachygraphs of the codices, but the general interior designing can easily be recognized.

To recapitulate the results obtained we will close by adding a diagram, showing the totals obtained:

TOTAL REPRESENTATION OF DAY SIGNS IN THE FIVE PALENQUE TABLETS.

TABLET NO.....	I.	II.	III.	IV.	V.	Total
1. Kan.....	4	1	3	1	2	11
2. Chiccan.....	0	1	3	1	2	7
3. Cimi.....	1	0	0	0	0	1
4. Manik.....	4	5	0	5	0	14
5. Lamat.....	1	0	3	0	0	4
6. Muluc.....	3	3	7	4	5	22
7. Oc.....	4	1	1	0	0	6
8. Chuen.....	19	4	8	2	3	36
9. Eb.....	0	0	0	1	0	1
10. Ben.....	4	2	1	4	5	16
11. Ix.....	1	3	0	0	0	4
12. Men.....	0	1	0	0	0	1
13. Cib.....	0	0	0	1	0	1
14. Caban.....	0	0	0	0	0	0
15. Ezanab.....	2	0	5	0	1	8
16. Cabac.....	4	1	2	0	1	8
17. Ahau.....	5	5	5	5	1	21
18. Imix.....	3	2	0	1	1	7
19. Ik.....	4	1	1	0	0	6
20. Akbal.....	0	1	0	0	0	1
TOTALS.....	59	31	39	25	21	157

ERRATA—On page 86 read each time Plate I instead of Plate III; on page 92, lines 1 and 7, read Plate II instead of Plate I.



## ENGRAVED SHELL GORGETS AND FLINT CEREMONIAL IMPLEMENTS.

G. P. THURSTON.

The gorgets, or pendants of shell, and copper engraved with the human figure, discovered in recent years, in the ancient mounds and graves of the south, are objects of peculiar interest. About eight or ten of them have been found, and reported: Two of copper and two of shell were discovered in the Etowah mound of Georgia, four of shell in Tennessee, two in Missouri, and one in southern Illinois. There may be others. They are usually about four inches in diameter. Most of them are supposed to represent warriors, or chieftans or prominent men of the ancient tribes.

Professor W. H. Holmes illustrated most of these gorgets, and considered them in an interesting article, published in the Second Annual Report of the Bureau of Ethnology. The writer subsequently reproduced them with some additions in "The Antiquities of Tennessee," and expects to present several new types in the second addition of that work.

It is singular that these engraved shells and plates have been discovered in various sections of the mound area, so widely separated; and still more singular that nearly all of them are similar in many of their features.

In most of the engravings the human figures are ornamented with earrings, wristlets, garters and anklets. Similar peculiar pointed aprons or skirts, and hanging scarfs appear in the finer types. The figures are generally represented in a similar kneeling posture. The complicated head coverings or ornaments also present striking similarities. Masks or human heads are held in the hands of three or four of the warriors, and in one hand, the right or left. They usually hold some large implement, probably a ceremonial flint or halberd, or some object indicating their authority or rank. Among the modern Indians, the holding aloft of weapon or ensign was also an indication of rank.

Long pointed chipped implements, evidently ceremonial objects, have been found in the skeleton hands, beside the remains in a number of graves of personages, apparently of distinction among the people of Tennessee. The fine engraved gorget of shell, representing "The Fighting Figures," well illustrated by Professor Holmes, shows a warrior holding a long, double pointed flint in his right hand. The writer has a number of similar specimens in his collection.

Within late years a few large and remarkably formed flint implements have been discovered near Nashville, Tennessee. The writer described and illustrated several of them. They were classed as ceremonials, but recently the purpose for which they were used has been shown by a discovery of unusual interest.



CEREMONIAL WEAPON.

In 1891 a large, well engraved shell gorget, representing the typical warrior figure—very similar to the Georgia copper tablet figures—was discovered in a burial mound in Sumner county, near Nashville, by Mr. W. E. Myer, an intelligent and experienced mound explorer of Carthage, Tennessee. The chieftain holds a human head or mask in his right hand, and a large peculiarly shaped implement in his left.

Some months ago the writer discovered what is probably the very object represented upon that ancient shell, or its duplicate, a large ceremonial flint of similar peculiar form, thus proving beyond question the purpose for which these strangely shaped flints were used. It is only necessary to examine the design upon the shell, and this fine implement, to recognize the identity of these two types.

The flint is  $15\frac{1}{4}$  inches long and over five inches wide at the points. It is made of the fine chert or flint, of which most of the large flint implements of Middle Tennessee were manufactured. It was found in southern Kentucky, not far from the Tennessee line, and not far from the mound in which the gorget was discovered. The similarity in the form of the flint and the object

engraved upon the shell at once attracted the writer's attention. Taken together, they certainly explain in a most satisfactory way the use of this class of objects or implements. I do not believe that a finer or more interesting or elaborately wrought specimen of ancient chipped stone-work than this old ceremonial flint has been discovered in this country or in Mexico, or Scandinavia. Four others of quite similar general form have been discovered in the Nashville district, and many other types, dif-

being somewhat in form, but probably used for some ceremonial purposes.

Among the interesting discoveries recently made by Frank Hamilton Dunning in the ancient "Mounds by the Sea," in southern Florida, he found what he calls "Ceremonial Clubs" or objects made of wood, very similar in general form to the large unique ceremonial flint I have described. The resemblance is indeed sufficiently striking to suggest the existence of ancient



SHELL GORGET FROM STONE GRAVE.

This gorget illustrates the method of weaving the stone maces, some of which were manufactured of stone and some of copper. The head which is held in the hand indicates a position which seems to have been common in some localities in prehistoric times, and explains the position which have been found in certain mounds of bodies without traces of "scalp-hunting" having taken the place of scalp-cutting, with certain tribes.

relations or intercourse between the inhabitants of the two widely separated sections.

In the same mound group, near Nashville, where the Myer gorget was found, an interesting pictograph in stone was discovered and illustrated by the writer, representing a group of Indian warriors—doubtless mound builders—and showing their dress, implements and general appearance. Through these discoveries

and coincidences we are able to learn—little by little, but with considerable exactness—something of aboriginal life within the mound territory. The gorgets engraved with the human figure offer a new and fascinating field of investigation. Taken together they give a fairly satisfactory idea of the appearance and dress of the leaders of the mound and stone grave tribes, whose remains have attracted so much attention.

These little pictured tablets tell an exact and truthful story. They unravel secrets that the imposing monuments of the race have failed to disclose.

The elaborate head-dresses, with the spread wings, as we learn from discoveries in the Etowah mounds, were made of hammered and burnished copper, from the mines of the far north. They rival the lofty copper-plated staghorn head dress of the old hero discovered by Warren K. Moorehead, in the Hopewell mound in Ohio.

The large earrings represented in these designs were also made of plated and polished copper. The necklaces and bracelets, garters, anklets and gorgets of shells and pearls and copper. Their skirts and girdles, and pointed aprons and hanging scarfs, as presented in these pictures, must have been skillfully made, and ornamented with considerable barbaric art. Some of the designs are also engraved with surprising skill, considering the primitive tools with which the work was executed. Holding aloft the large flint ceremonials, as emblems of their rank and authority, these old warriors, arrayed in their elaborate dresses, must have presented a commanding appearance in the wars and councils of their people. It seems to the writer that the vestiges of art found in these little shell and copper portraits show some traces of affiliation with the arts of Mexico and the southwest, and also that they indicate some advancement in culture above the general status of American Indian life, as viewed from a historic or frontier standpoint.

Professor Frederick Starr has recently announced, in an interesting illustrated pamphlet, the discovery of a shell gorget, engraved with the human figure, in Mexico. It is similar in many of its features to the specimens found within our southern mound area. It is about the same size and shape. The engraving is upon the inner or concave surface of the shell. A circular band or border encloses the figure. The open work in the shell is frequently illustrated in our Tennessee types. The design of the peculiar human figure and the circles in the border also suggest several points of resemblance. It was evidently used for the same purpose as the shell gorgets found far to the north, and adds another link to the chain of Mexican and northeastern affinities and relationships.

Since the foregoing paper was prepared a remarkable deposit of flints was discovered in an ancient cemetery near Waverly, in

middle Tennessee, west of Nashville. There were nearly fifty-five specimens in the collection—all of the ceremonial or totem type—embracing tints of the mace or scepter form, and the sickle, disc and turtle forms. Among the number were many narrow, double pointed specimens of unusual length. One measures  $27\frac{1}{2}$  inches long, and is doubtless the longest flint in the world, of this type. Others are 22,  $21\frac{1}{4}$ , 19, 18 and 17 inches in length. These rare ceremonials are now in the fine archæological collection of the Missouri Historical society. They will be illustrated in the forthcoming edition of the Antiquities of Tennessee.

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#### RELATIVE AGE OF THE PUEBLOS AND CLIFF-DWELLINGS.

It was formerly the opinion that the Cliff-dwellers were among the most ancient people in America, that their history extended back an indefinite period into the past, and that their departure and final destiny are enveloped in mystery, which it is useless to penetrate. This opinion has been greatly modified by recent exploration, and the evidence now is, that so far from being the earliest people they belonged to the last of three periods of occupation, the earliest of which was marked by boulder sites and the pueblos, which are now in ruins, the most of them being situated in the valleys near the water courses and irrigating canals, and attended with ancient picture writings or petroglyphs; the second by the pueblos, which are built upon the mesas, the third by the cliff dwellings. All of these show that the people had dwelt and continued in a peaceful and an agricultural condition for many years, and perhaps centuries, but had at last suffered from the attacks of wild tribes, who invaded their possessions, kept them constantly disturbed, and drove them first to the mesas and afterwards to the cliffs, as the only places where they could be secure. The date of this invasion is unknown but the general opinion is that it was many years before the first visit of the Spaniards, though many changes took place in the population after that event. Possibly some of the cliff-dwellings have been occupied during the historic period, but if so it was by the tribes which had long continued to besiege the people in their homes, and in the meantime borrowed many of their arts and perhaps their symbols.

Among these tribes may be mentioned the Utes, the Apaches, and the Navajoes, for the latter people still occupy the region, and occasionally use the ruined pueblos as corals for their sheep and temporary homes for their families.

It is indeed difficult to draw the distinction between the earlier and the later people, for the pueblos and the cliff dwellings are

built in the same general style, and contain similar relics and specimens of art, and are attended with similar pictographs and symbols, yet the conviction grows stronger as we examine these tokens in detail, that the Cliff dwellers were later than the Pueblos but that the time when they abandoned their homes in the cliffs and surrendered their territory to the wild tribes who now occupy it, was before the Discovery.

It is interesting to go over the region and study the structures, and especially the pictographs, and read in them the early history of the people and mark the changes that came upon them.

We may say here, that the pictographs are the most interesting tokens. These have been noticed by all the explorers who have visited the cliff dwellings, beginning with Lieut. Simpson and Ives, who described those which are near the pueblos of the Zunis and with Messrs. Holmes and Jackson, who described those found near the cliff-dwellings of the San Juan and including those who studied the pictographs in the shelter caves, all of whom hold that the cliff-dwellers had a way of recording events which was understood by them, but to us is obscure.

Some of these pictographs have modern figures mingled with the ancient, viz., men with guns and horses with saddles upon them; evidently placed there by Indians after the advent of the white man. The majority of them, however, have figures and symbols, which belonged to pre-historic times, and a strong resemblance can be traced between them and others which may be found upon the rocks near the ruins on the Gila river and the ancient pueblos on the Zuni and elsewhere. Among these pictographs are some which are very ancient. To illustrate, one described by W. H. Holmes represents a long line of animals, some of which were domestic dogs, llamas and turkeys, the line forming a procession as if in the act of migrating, though possibly they may be driven by men into the corals. In this pictograph is a figure resembling a reindeer and a sledge, conveying the idea that the person who made it was familiar with scenes common among the Esquimaux. Similar pictographs are described by Dr. Washington Matthews as representing llamas as found upon rocks in the Puerco valley.

These pictographs represent hunters or herdsman in the act of casting lassos or the bolus, also holding in their hand a peculiar four-branched instrument. One rock inscription shows a number of these animals with a hunter, who bears a bow in one

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NOTE.—He says an intimate relationship exists between the builders of the ancient Salado temples and the ancient pueblos of Arizona and New Mexico, a relationship also less intimate between them and the ancient house building tribes of Old Mexico. There are facts which point to a close connection between this people and the ancient Peruvians. It has been surmised that such animals continued to be domesticated by the sedentary Indians down to historic days, but Mr. Bandelier says, if there has ever been a llama Guanaco or Vicuna known to the southwestern Indians it became extinct long previous to the sixteenth century."

hand and a line in the other. Another represents a company of dancers, as in front of the hunter. Still another depicts a bola thrower in connection with a flock of turkeys. Knotted cords have been found in sacrificial caves which resemble quippus or the knotted cords of the Peruvians.

There were also unearthed terra cotta images of llamas in the ruins of some of the ultra mural houses near Los Muertos, on the Rio Gila.

The pictographs in the shelter caves and near the cliff-dwellings depict certain wild animals, such as Rocky Mountain goats, wild turkeys, snakes, centipedes, but none of them represent the llama or the bola throwers. These convey the impression that a great length of time had passed between the first settlement of this region and the time when the people were driven to the cliffs for safety.

It is a singular fact that no image or pictograph of the buffalo has been found in the pueblo territory, though that animal was very common in the Mississippi Valley.

Still, the procession of animals, guarded by dogs and men, would indicate that the custom of driving animals into corals or through game drives, was as common among hunters here as farther east, where buffalos and larger animals were hunted.

The pictographs near the ancient pueblos show that they were occupied by people sedentary in their habits, who had domestic animals, and used their wool as well as cotton for their fabrics, and depended upon agriculture and irrigation for subsistence; but the pictographs of the Cliff-dwellers, on the other hand, would indicate that their life had become wild, and that they had resorted to hunting as the means of subsistence. The contrast between the earlier and later periods being brought out by all these circumstances.

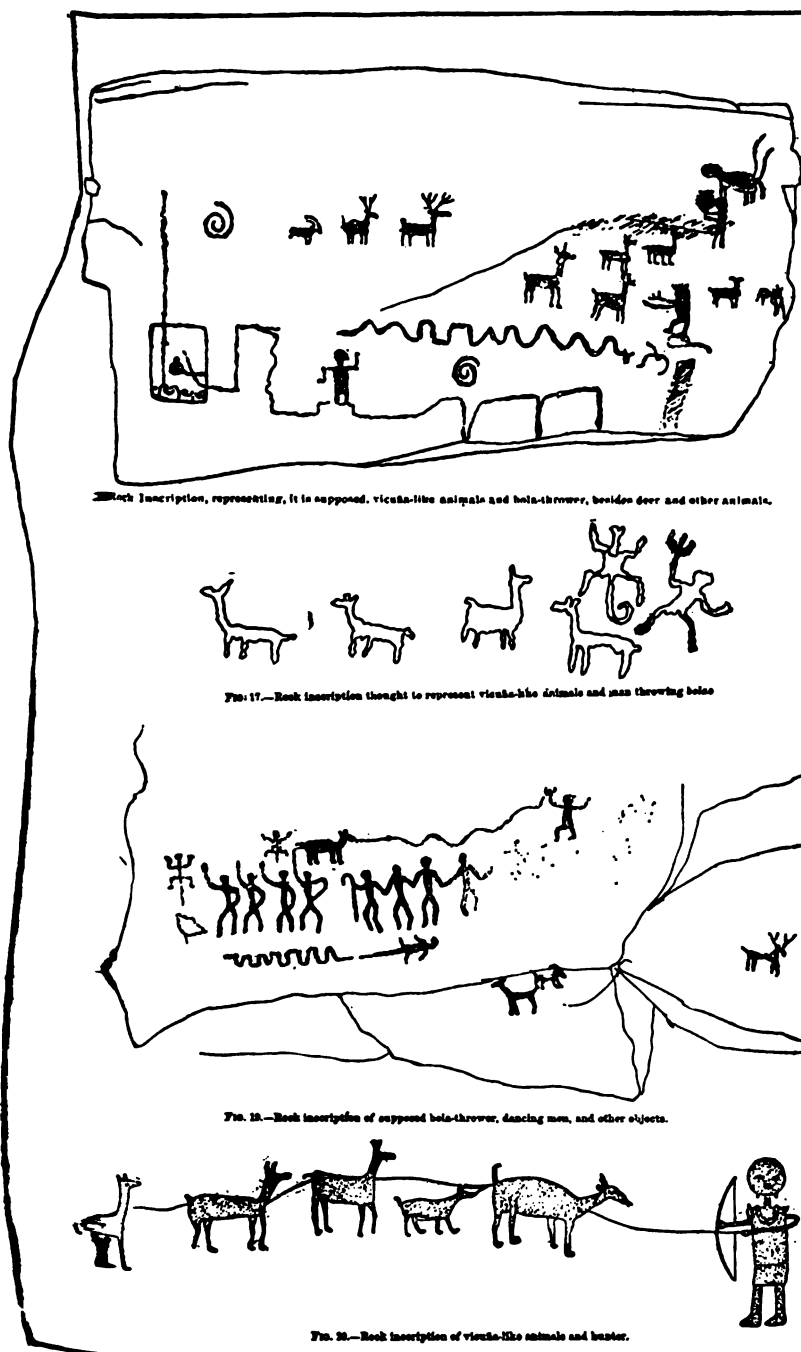
Here, then, we have the same problems brought up by the pueblos, which we have found so formidable among the Mound-builders, for the appearance of extinct animals, such as the llamas and the elephants, suggest great antiquity and a diversity of origin to the people, as the llamas are animals that belong to the Southern Continent, and not to the Northern.

Another proof of the great difference in time, between the erection of the pueblos and the cliff-dwellings, is presented by the condition of the structures themselves.

We have shown that the pueblos in the valley of the San Juan were nearly all in a state of ruin. The cliff-dwellings on the other hand are generally well preserved. This has been explained by the fact that buildings in the "open" will go to ruin much faster

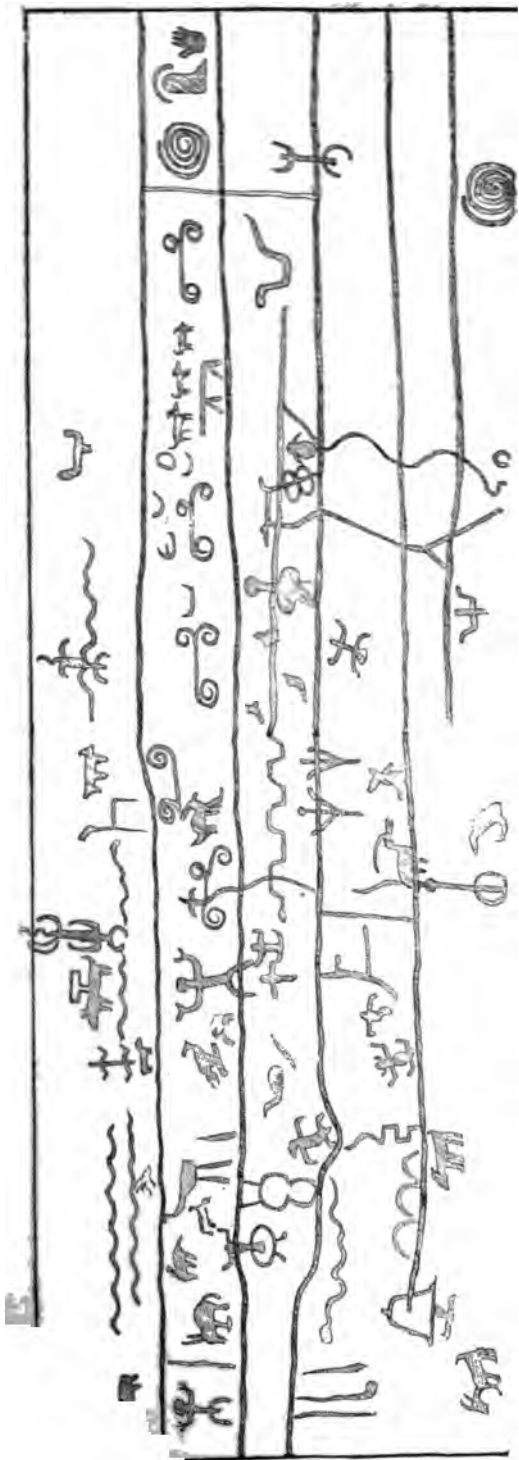
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NOTE.—The two cuts, one of which depicts the wild animals in procession and the other depicts them as loose and free, perhaps represents two periods of time; the first the period in which the ancient pueblos were built; the second, the period in which the shelter caves and cliff-dwellings were occupied.



PICTOGRAPHS IN ARIZONA.





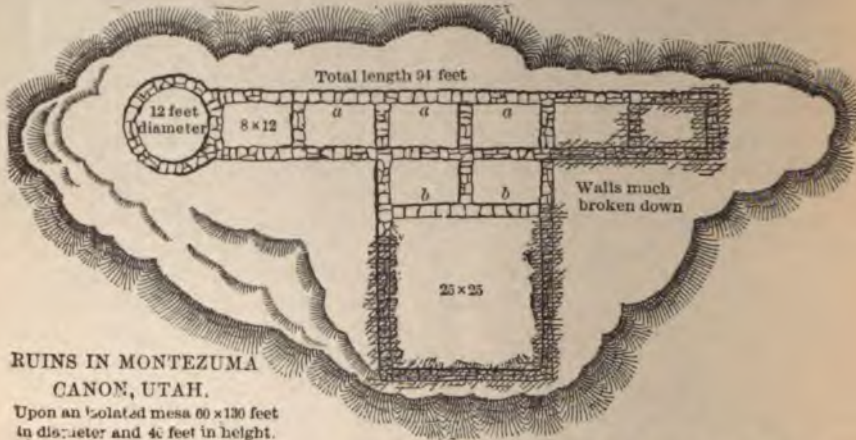
than those sheltered by the "rocks," but this will not account for the great difference between them.

The cliff dwellings are built on the same general plan as the pueblos. They have courts and streets, store houses and store rooms, estufas, terraced houses, balconies, look-outs and towers exactly as the pueblos have and are generally near the streams and springs of water, but the walls are for the most part in perfect condition, and the relics and remains are well preserved. Their walls all stand, the floors and roofs remain, the windows and doors retain their original shape. The towers are as symmetrical and complete as when first built, and the estufas, though their walls are thrown down, often retain ornaments and shapes which they had when they were occupied. The impression formed by most of the visitors to the cliff dwellings is that they were comparatively modern, for some of them look as if they had been just left, and one is led to expect that some lingering survivor of the denizens of the cliffs will arise to confront him and arrest his steps. The explorer among the ruins of the pueblos on the other hand is always impressed with the sense of their great age, and he begins to speculate as to how many centuries have passed since they stood in their stately magnificence, as ornaments in the landscape, and were filled with a teeming multitude of agriculturists, who drew the water for irrigating the soil from streams near by. It is the testimony of most explorers that the pueblos of the ancient or early period were superior to those erected in later times in their general style and finish, number and conveniences of their apartments and in their surroundings, indicating that the people who occupied them were then in a higher state of advancement than their successors, either in this region or in any of the pueblo territory.

Still, after examining the ornaments, relics and pictographs one is convinced that the people who beat a retreat to the cliffs were the same as those who built the pueblos, for they show the same taste and skill, the same stage of advancement and the same religious sentiment, and the same desire to perpetuate the records by signs and symbols. The only difference is that the cliff dwellings were erected by a people who had been driven from their permanent and peaceable homes and compelled to build their houses in the deep recesses of the rocks, and make their villages fortresses, the chief protection consisting in the fact that they were inaccessible. This would show that the pueblos, which we have seen, were so numerous in the valley of the San Juan and its tributaries, some of them situated on the mesas and others in the valleys, were the more ancient. Those of the Tusayans and Zuni were the more modern, but the cliff dwellings were built at an intermediate date.

The conclusion we reach, after comparing the various classes of ruins, is that the agricultural settlements which formerly

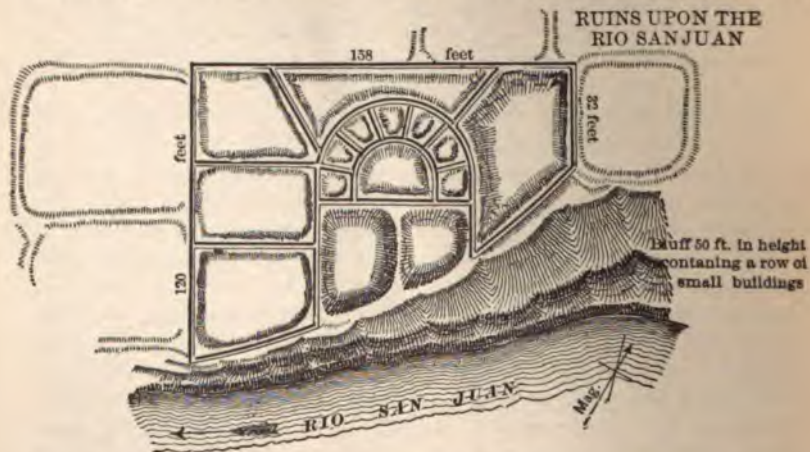
filled the valleys, and which teemed with a peaceable and prosperous people, had been broken up by invading savages, but the people fled to the cliffs, and built their towns in these rocky fastnesses, where they followed a precarious livelihood, as their homes were always subject to alarms.



**RUINS IN MONTEZUMA  
CANON, UTAH.**

Upon an isolated mesa 60 x 130 feet  
in diameter and 40 feet in height.

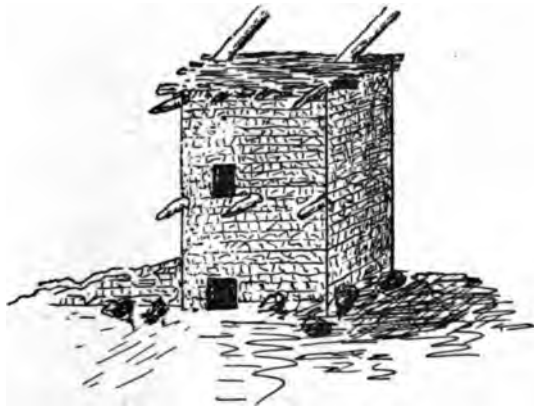
We have already described several pueblos of the earlier period. We add a few cuts, which perhaps represent the structures of the same period, as they are small pueblos built upon the mesas, descriptions of which have been given by



W. H. Holmes. One of these was in the Montezuma Canon. The ruin occupies one of the small, isolated mesas, and was composed of a wall made up of long blocks, which were placed upright, similar to those already described, but the spaces between the uprights were filled with smaller rocks. The second

ruin was upon the Rio San Juan. It was a small pueblo situated upon a bench about fifty feet above the river. In the center of the building was a court seventy five feet wide, averaging forty feet in depth. Back of the court was a series of seven apartments, arranged in a semicircle, and outside of these other larger rooms. Extreme massiveness is indicated throughout the whole structure. It was also of great age.

In contrast with these is the two-story cliff house, which has been described by Lewis W. Gunckel as situated on Butlers Wash. It shows the change from the communistic house back to the straggling village, as the houses were all separate, though the same elements of the village were retained. This



TWO-STORY CLIFF HOUSE.

house was furnished with a balcony and modern looking doors. Its roof was supported by timbers which stretched from the outer wall to the rocks in the rear. There are many such houses in this region. They indicate that the clan life had already been broken up.

It is probable that at one time a dense population occupied the valleys of all the larger streams, such as the San Juan, including its branches, the Animas, La Plata, Chaco, the McElmo and Hovenweep, and the Rio Grande and its branches, the Gila and its branches, including the Verde, the Salt River, Colorado River, including the Little Colorado and the Chiquito, for there are ruined pueblos scattered over this region. Some of them "Great House Pueblos," others "Boulder Mounds," and still others "Cliff Towns."

The most interesting pueblo of the ancient or early period is the one situated on the Animas River, near the little village of

Aztec, New Mexico. This was visited by Lieut. Rogers Birnie in 1875, by Mr. L. H. Morgan in 1877, Mr. L. W. Gunkel in 1892, and descriptions given by each.<sup>1</sup> The following is Mr. Morgan's description:

This pueblo is one of four situated within the extent of one mile, though there are four or five smaller, inferior ruins within the same area. It was five or perhaps six stories high [See Figure] and consisted of a main building 368 feet long, two wings 270 feet long, with a fourth structure made with two walls, which crossed from the end of one wing to the end of the other, and enclosed an open court in which was a large *estufa*. It was built in a terraced form and had its rooms arranged after the "honey-comb" pattern, but differed from others in that the partition walls stand out three or four feet like buttresses, and show that the masonry was articulated, and that the partition walls were continuous from front to rear, and the walls of the several stories rested upon each other. Every room in the main building was faced with stone, on the four sides, and had an adobe floor and wooden ceiling. Each room had two doorways and four

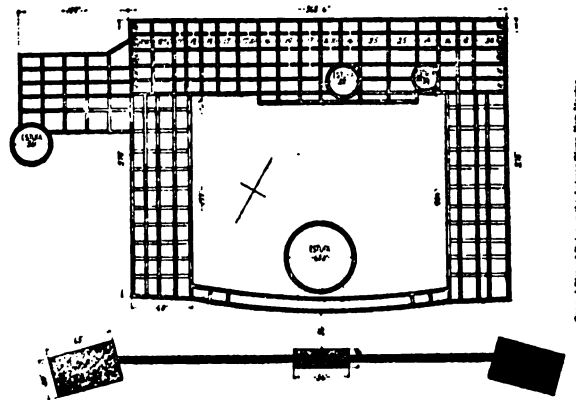


FIG. 12. PUEBLO ON THE ANIMAS.

openings about twelve inches square, two on each side of the doorway near the ceiling. The openings were for light and ventilation. The neatness and the general correctness of the masonry is best seen in the doorways, some of which measure three feet, four inches, by two feet, seven inches. The rooms in all cases ran across the building, from the external court to the exterior wall, and were connected with those below by means of trap-doors and ladders, with those in front and back and at the side by doorways, after the pattern in the present occupied pueblo of Taos.

The families lived in the second and upper stories, and used the rooms below for storage and for granaries. Each family had two or four or six rooms, and those who held the upper rooms held those below. The number of apartments would make an aggregate of four hundred rooms. The house was a fortress, and also a joint tenement house of the Aboriginal American model, and indicated an ancient communism in living, practiced by large households (or clans) formed on the principle of Kin. It presented a great resemblance, in its general plan and the arrangement of the rooms and courts, and especially in the style of building the walls, with alternate

(1) For Lieut. Birnie's description see Wheeler's Survey of 1875, page 178; Morgan's Houses and House Life, p. 173, Fig. 40; Illustrated American, May 28, 1892, article in Search of a Lost Race, p. 88.

courses of thin stone, to the ruined pueblos on Rio Chaco, about sixty miles distant, described by Gen. J. H. Simpson.

Near this pueblo is another, built in two sections, with a space about fifteen feet wide between them, though they were probably connected in the upper stories and inhabited as one structure, the openings between them forming a passage way resembling that still existing at Walpi and other Tusayan villages.

The largest of these buildings seemed to have an open court in the center in the form of a parallelogram. The most remarkable feature was the following: Midway between this pueblo and the larger one just described, is a circular ruin 330 feet in circuit, which seems to have consisted of two concentric rows of apartments, around an enclosed estufa, built of cobble stone and adobe mortar, which was probably used as a council house or assembly place for the entire Phratry.

From the number and size of the houses there was probably a population of at least 5,000 persons at this settlement, who lived by horticulture. The supply of water for irrigation at the pueblo was abundant, as the valley of the Animas River is here broad and beautiful and about three miles wide, the river passing through the center of the valley. The cliff on each side of the plain is bold and mountainous, rising from 1,500 to 2,000 feet high.

These pueblos, newly constructed and in their best condition must have presented a commanding appearance. From the material used in their construction, from their palatial size and unique design, and from the cultivated gardens' with which they were undoubtedly surrounded, they were calculated to impress the beholder very favorably with the degree of culture to which the people had attained."

This description by L. H. Morgan is worthy of attention from the fact that he recognized the buildings as the abode of a phratry<sup>2</sup> and suggests that here was a large agricultural settlement.

It would seem from all the accounts that have been written that there was here a group of pueblos which resembled those on the Chaco river to the south and those which are still occupied by the Tusayans and the Zunis.

(1) That there were irrigating canals, which could escape observation, is evident from a discovery which was made in 1896 by Capt. D. D. Gaillard, U. S. A. It appears that a dam, five and one-half miles in length, in Grant County, New Mexico, composed of sedimentary material, but having the appearance of great age, was found. The materials of the dam, the direction of its axis, the regularity of its slopes, the uniformity in elevation of its crest, the fact that it joins high ground at both ends, and its location, would indicate that this remarkable earth work was of artificial construction; but so gigantic is the work that it was taken for a natural ridge.

(2) According to Mr. L. H. Morgan, a phratry was a brotherhood composed of related clans, and was caused by a separation of a tribe into two divisions for social and religious purposes, but implies nothing concerning the existence of a confederacy. The phratry was without governmental functions, for these belong to the tribe, but it had much to do with social affairs.

It is not known whether there was any confederacy,<sup>1</sup> but it seems probable that the clans or tribes who dwelt in the pueblos that are now in ruins were allied and the wonder is that they could have been driven off by the wild tribes. This was owing to the fact that each Pueblo was independent or under the direction of a chief, but there was no organization which extended to the other Pueblos, or brought them under one head. This seems to have been the case even with the Iroquois or six tribes until the time that Hiawatha organized them into a confederacy.

It would seem that the Pueblos were long beset by the wild tribes, for their style of erecting buildings in terraces surrounding a court, with a wall in front of the court, was well adapted for protection against a lurking foe. There were also provisions made for defense against a sudden attack, as there were lookouts and towers on every high point, and some of the pueblos themselves were situated on the mesas, where they could command extensive views of the valleys.

"There were many signs of a prehistoric race which once lived and prospered in this region. On almost every prominent point are mounds of debris and rudely squared stones, which mark the houses of the people, all in a state of a far advanced ruin, with but few walls remaining intact, projecting above the mounds. The valley, if properly irrigated, is excellent land for farming and orchards, though there are, at present, few signs of irrigating canals.

The forests are few and found only at great altitudes, but in the ledges and cliffs, which line and enclose the water courses, there were, everywhere, loose stone, lying in blocks, ready for the builders' hand. It was probably here that the early inhabitants learned to build their dwellings of stone and that the communal houses or pueblos of stone first reached their pretentious dimensions. Among the most interesting of the relics which were left by the prehistoric people were the delicately formed arrow-points made from obsidian, jasper, moss-agate and flint of many and variegated tints and colors. Several pottery bowls, with red decorations, containing flint knives; one cup shaped bowl with a long handle, and one or two mugs with a bent handle; vases with handles on either side, bottles, jars and mortars were found, all of which showed that the domestic pottery was generally decorated. There are several other pueblos in this vicinity which illustrate the contrast between ancient and modern structures. One of these has been described by Mr. Gunckle. It is situated upon the La Plata, about three fourths of a mile

(1) Where several pueblos were situated near each other on the same stream, the people were of common descent, but they were not necessarily under a tribal or a confederal government. The tribes held religious festivals at particular seasons of the year, which were observed with forms of worship, dances and games. The medicine lodge, with the wild tribes, was the center of these observances; but among the Pueblos it was the kitchen. Military operations were usually left to the action of the voluntary principle.

south of the Colorado State line, near the Reservation of the Utes. He says:

"It forms one of the most prominent and imposing points, from which the view up and down the river is magnificent. From any point in the ruins one can see fifty miles or more through the fertile valley, which extends along the La Plata, bounded on each side by mesas. The altitude of the ruins is 6,100 feet above the sea level, and 125 feet above the La Plata.

It speaks well for the ancient builders of this communistic town that they chose such a favorable site for their abode, as it is near good water, high above the surrounding mesas, where the scenery was magnificent and here an enemy could be repulsed by a mere handful of men."

With all this they took the precaution to build a circular "watch tower," 100 feet above and 300 feet westward of the town, on a high sandstone promontory, thus doubly insuring the safety. From this tower one could see the approach of an enemy for miles away. The ruins contain about 100 rooms, and were originally about three stories in height, but the rooms were filled with accumulated dirt and stones. One peculiarity of the ruin was a double row of walls two feet apart, running parallel to each other, and evidently formed a passage way, or covered way, from one part to the other.

One room on the west side seemed to have been used as a kiln for the baking of pottery. Near this was an estufa, measuring thirty-six feet across and of considerable depth. Several smaller estufas are situated on the north side of the ruin."

At one place about fifty feet from the ruins we were surprised to note a square, chimney-like hole, carefully walled upon all sides. It measured fourteen inches across and went down fully eight feet. It was neatly faced with hard stone and had a stone floor. At a depth of six feet it turned and formed a horizontal passageway.

This air-passage is worthy of notice because of its resemblance to those found among the cliff-dwellings. It shows that the same style of constructing their estufas prevailed among the two classes of people. The pueblo near which it was found was in about the same state of ruin as those on the Chaco and the Animas Rivers, and resembled those in many points. The estufa, however, was exactly like those found among the cliff-dwellings farther west, and shows that the people fled there after a prolonged attack from the wild tribes.

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A feature which seemed to have also been found at the large pueblo on the Animas River.  
Extract from Mr. Gunkel's note book.



## PALESTINE EXPLORATION.

It now appears very clearly that all the ancient chronicles in regard to the wall of Jerusalem were trustworthy. It had a very strong wall, made stronger by frequent towers or bastions. The wall ran all around the brow of Zion hill, crossing the Tyropæan valley, and then going northeasterly to the corner of the Temple enclosure. As it will be represented on new maps, the present wall on the south side will be a nearly straight line, placed east and west, with a loop southward from its ends, like a bow with cord loosened. The space between the straight and the curved lines has been very little explored as yet, but at the Pool of Siloam Dr. Bliss has found the perfect formation of a very early Christian church, showing its whole plan. This place will be kept open, and will be one of the most interesting objects in or near the city.

In all this work of uncovering walls, Dr. Bliss has found nearly nothing except the stones themselves, and nothing more could have been expected. If he should make thorough work of the valley in its higher reach, he would be working the most promising part of the city for historical remains; but it is very deep and hard work, compared with the exploration of a tell or mound, and of these, scores await the spade. I hope that he will persevere for a year in Jerusalem and then go to Jericho.

There is talk of extending the Jaffa-Jerusalem railway. It would be carried first still nearer to the city, and have a station at the Dung Gate, near the southwest angle of the Temple area. Then it is proposed to run it around the southeast angle and across the Kedron valley to the village of Siloam, and so eastward to the Dead Sea. The increasing development of tropical farming near Jericho probably leads to this plan, and, moreover, the Dead Sea may yet prove a mine of wealth in several ways.

Dr. Conrad Schick has made a study of the roads leading from Jerusalem to Jericho, and has laid them out on a map published in the *Statement* for April. There are really three such roads—the northern, the southern, and the present one between them. There is reason for believing that David, fleeing from Absalom, went out and down by the southern road; that our Lord, coming up to Bethany to raise Lazarus

from the dead, took the southern road; and that, when He came up for the last time, he pursued the northern road to a certain point, then crossed behind Olivet to Bethany, rested there over the Sabbath, and entered Jerusalem by the southern road.

The discussion on the form of the Tabernacle still goes on, especially as to the ridge pole or ridge cord. There is nothing about such a thing in the Biblical account, and there is nothing of the kind in our oriental tent. One of the difficulties with such a study results from the fact scholars start from occidental conceptions, and add more or less to the Biblical description in order to get their theory into form. I do not believe that any reconstruction which puts so much into the plan can be right, and I therefore commend the modest little book, "The Tent of Meeting, Usually called the Tabernacle," by Mr. G. Wolworth Colton, published by Messrs. G. W. & C. B. Colton & Co., 312 Broadway, New York. He begins with a small Bedouin tent, and keeps to that basis. The result is that he does not have a ridge at all, nor a roof like a barn, but he has a graceful Oriental tent, the covering of which is supported in part by the three lines of planks, firmly fastened, and in front by the posts on which are hung the two veils. As the planks firmly support the canopy on the three sides, and the posts of the outer veil support it in front, we have only to consider the support of the center. For this we have the five posts of the inner veil, and also the stairs of the altars, table and lamp stand, which would probably be used as such supports are used now in an eastern tent.

As the Suastica is being so much studied, and is found to have been in use all around the world, a request has been made in the *Statement* for definite information about all instances of it in Palestine, and the result will be communicated in due time.

Circulars of the work of the Palestine Exploration Fund and its publication are furnished by me. I have everything on hand.

THEODORE F. WRIGHT.

## EDITORIAL.

## TWO DISTINGUISHED MEN.

Two of the most prominent men in scientific circles have passed away within a few weeks of one another, one of them, the veteran archæologist of Canada, Dr. Horatio Hale, the other the noted naturalist, Prof. E. D. Cope.

Both of these gentlemen were highly honored at the last meeting of the American Association held at Buffalo. Dr. Hale was not present, but was elected in general session as an honorary member, and words of high commendation were spoken as to his valuable work in connection with ethnology. Prof. E. D. Cope was there in the full strength of mature manhood, and presided with his usual grace and self-possession, having been elected president at the Springfield meeting.

Dr. Hale was born in Newport, N. H., in 1817, died at Clinton, Ontario, on December 28, 1896, in his eightieth year. His mother was the author of the most popular children's poem in any tongue, "Mary Had a Little Lamb." His father was an eminent lawyer. He graduated from Harvard in 1837, and was appointed the same year as philologist of Com. Wilkes' Exploring Expedition, and his contribution on ethnography and philology formed the sixth volume of the Reports published in 1846. In 1870 he took down a vocabulary from the last survivor of the Tutelo tribe, which proved to belong to the Siouan stock. This was published in 1883 by the American Philosophical Society. The most valuable contribution which Dr. Hale ever furnished was read before the A. A. A. S., at Montreal in 1882, and published in the AMERICAN ANTIQUARIAN, of April, 1883, entitled "Indian Migration as Evidenced by Language." In this he identified the Cherokee as a member of the Iroquoian family. He also wrote the Iroquois Book of Rites, which was published in Brinton's "Library of Aboriginal Literature," in 1883. Also a Report on the Blackfoot Tribes published in 1886 by the British Association. Another article upon "Language a Test of Mental Capacity," was published in the AMERICAN ANTIQUARIAN and in the Proceedings of the Royal Society of Canada in 1891.

Three other articles have appeared in this magazine: "The Iroquois Sacrifice of the White Dog," January, 1885; "Man

in Language is the True Basis of Anthropology," Vol. XV., 1893; "The Schuylkill Gun and its Indian Motto," January, 1896.

Dr. Hale was a conscientious and a thorough scholar, and has left behind him a large number of valuable contributions, whose titles cannot be given here. As a Christian gentleman he was always courteous and kindly, never disturbed because others differed with him in opinion, or particularly ambitious to secure position, having confidence that whatever merit he had, would ultimately be recognized, which fortunately proved true before his departure.

Prof. E. D. Cope was born in Philadelphia in 1840, and died at his home in that city, April 12, 1897. He studied medicine at Philadelphia, and became Professor of Natural Science in Haverford College in 1866. He was employed by the Geological Survey of Ohio in 1868, and made his first western exploration in 1870. He became connected with Hayden's Geological Survey in 1872, and the following year projected an expedition to Northeast Colorado. He was employed in the Wheeler Geographical Survey, and explored the Eocene and Jurassic beds of the Rockies. He collected the largest backbone animals with ambulatory limbs known.

He was editor of the *American Naturalist* for many years, and established his reputation as a scientific man as much by this journal as by his reports to the survey.

He was an evolutionist, and followed fast upon the tracks of Huxley, but was not so much of a controversialist as was that distinguished gentleman. He is widely known as the leader of the Lamarckian School, and showed many brilliant qualities as a philosopher as well as naturalist. His first collected philosophical essays were on the "Origin of the Fittest." His last was entitled, "The Primary Factors of Organic Evolution," published by the Open Court Publishing Company in 1896. The last of his contributions to science would fill up many pages, but must be omitted.

His department was somewhat remote from anthropology, yet his acquaintance with natural history and geology led him up to man as the crowning work of nature and of God.

His visits to Section H, of the A. A. A. S., were always welcome, for he furnished information about the "connecting links" which few others could. His theory in reference to the descent of man led him to keep constant track of all the discoveries of fossil man, and his acquaintance with other departments enabled him to see the bearings of the various discoveries of the Anthropologists.

It is a singular fact that the editor of the *Naturalist* and

of the AMERICAN ANTIQUARIAN, while differing entirely in their religious views, and even in their scientific theories, were somehow drawn to each other, and were the warmest and closest friends. It shows how the love of truth may cement human hearts. We may differ in opinion, yet as the children of God, they may live up to the light they have, wait for further revelation as to the "origin of the species," and "the creation of man." Reverence for truth will naturally make a man humble.

Prof. Cope, as man, was frank, honest and sincere. He was a thorough investigator, and has made his mark in the world. America is made poorer by the loss of such a man, not so much in dollars and cents, but in those qualities that are useful to society and of especial value in laying the foundations for science on which future generations may build.

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#### THE SUASTIKA IN AMERICA.

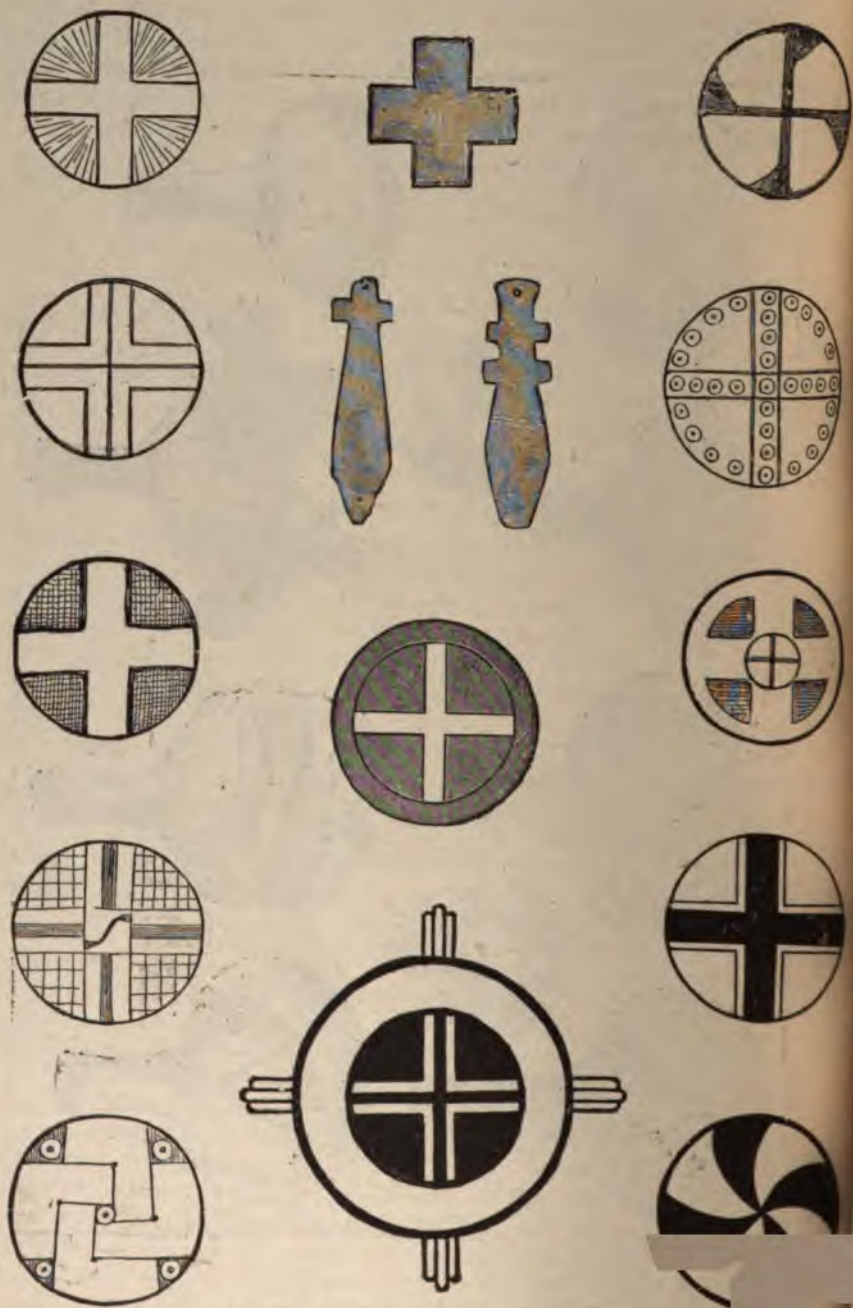
The book by Mr. Thomas Wilson on the Suastika is exciting considerable attention. It appears that there were different forms of the Suastika in this country as well as in the far east, as the arms vary in shape, some of them being at right angles, others curved. The most common form is called the hooked cross or Suastika. Another form is called the ogee and still another the spiral. The Tetraskelion is a four-armed symbol with a solid and square center, and the Triskelis is a symbol with three arms. It is divided into two classes, spiral and volute. Another symbol has five arms. This is also divided into two kinds, spiral and volute. The Scandinavians call it "Thors' Hammer," as the Greek, Latin and Thor crosses are represented in the Egyptian hieroglyphics by a hammer.

The interpretation of the Suastika seems to vary in different countries. It is held to be the symbol of the Sun-god; of Agni, the Fire-god; the Rain-god, Indra, the Sky-god, and the god of light and forked lightnings; the generative principle, the fire generator and the birth of fire; the fire drill, and by some as a modification of Egyptian meander, which has no special significance.

It is difficult to decide as to its significance in America, though judging from its shape and its association with other symbols, especially the sun circle and the cross, we conclude it is designed to represent the revolution of the sky and is in reality a revolving cross. In favor of this supposition is the fact, that the Suastika and the Triskelis are frequently seen on the inside of circles; sometimes in the center of disks, and are arranged in such a way as to convey the idea of motion, the symbols of the sun and moon and the serpent all conveying the same idea of revolution. Sometimes the symbol of the cross is found associated

SYMBOLS ON POTTERY FROM MISSOURI.





CROSSES SUASTIKAS AND COSMIC SYMBOLS.



with the circle or sun-symbol, the cross being always the sign of the cardinal points and the four quarters of the earth.

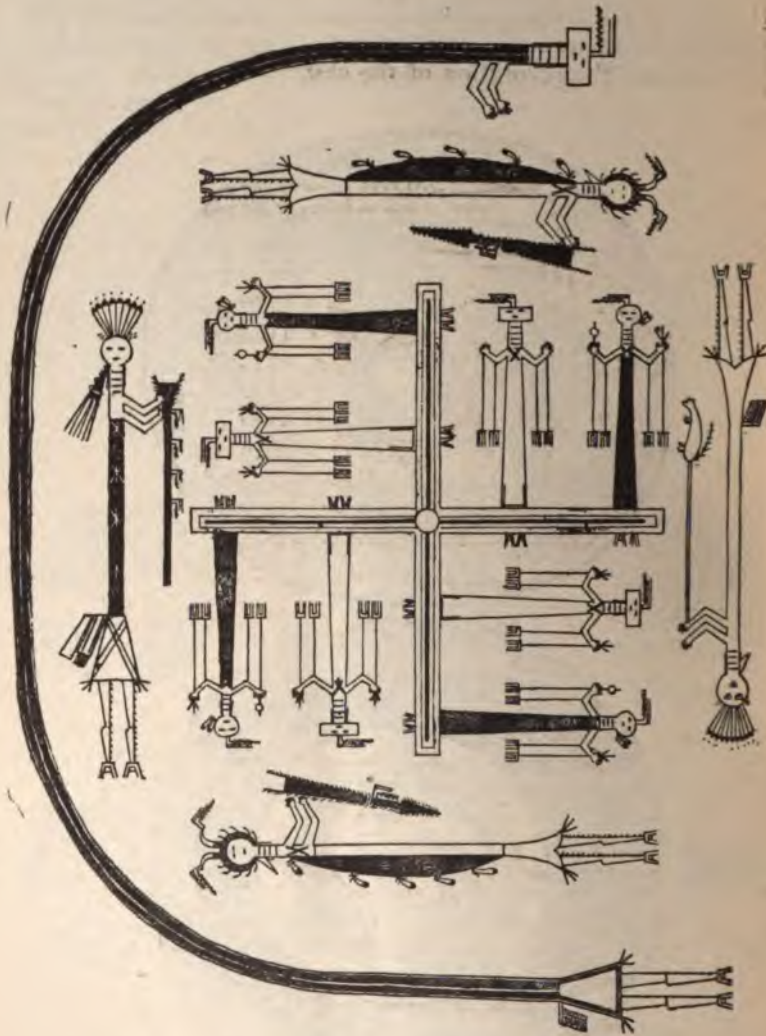
In some cases the looped square and the birds' heads are outside of the cross and circle, thus symbolizing the four quarters of the sky and the revolution of the sky.



SYMBOLS OF THE REVOLVING SKY.

There is a constant transition from the cross to the Suastika, a part of the Suastika being in the centre of the cross; occasionally the arms of the cross are spread out, making an ogee figure, the Suastika itself being only a hooked cross. In one case there are the five dots in the Suastika; these remind us of the nails





SUASTIKA—HUMANIZED RAINBOW AND CLOUD SYMBOLS.

Representatives of the Storm Cloud—Rainbow—Mountain Divinities—Sky Divinities—  
The Foaming Sea—The Suastika Representing the Revolving Sky.

which were driven into the frame-work of the fire generator described by Schleimann, but there is no other evidence that the Suastika was a fire symbol. On the contrary, the use of the Suastika by the Navajoes and ancient Pueblos is always attended with myths concerning the sky divinities and symbols of the sky and clouds and mountains; the feathers symbolizing the clouds, human figures symbolizing the sky divinities, the Jerusalem cross symbolizing the water, the humanized rainbow symbolizing the arch of the sky. The same is true of the Suastika as used by the ancient Mexican and Maya tribes. With them the Suastika is used as a calendar symbol as well as a cosmic symbol. In one case the cross and the circle are combined, the arms of the cross are bent so as to form a circle, and are divided into thirteen parts to symbolize the thirteen days of the week. This is called the "Calendar Wheel from Duran." It should be said



SPIRALS AND LOOPS ON POTTERY—WIND SYMBOLS.

that the Suastika is not as common a symbol among the Mayas as the cross, for the cross appears in all forms, the Maltese, the St. Andrews, the Greek, and the Latin, and is frequently embellished and ornamented with symbols. The revolution of the sky is symbolized by the serpent, among the Mayas, as seen in the calendar stone, but the division of the sky is represented by the cross, and the square.

It is manifest that the Suastika was a universal symbol in America, but it symbolized a very different element here from that which it did in India, as it was there used to symbolize fire: while here it symbolized the wind and sky. Still we learn both from Mr. Wilson's pamphlet and from other sources that the Suastika in Corea, China, India, Caucasus and especially in Troy was used as a symbol of the revolving sky, the diverse shape of the arms, all conveying the same idea of motion. The spindle whorls from Troy have many curved arms, with a central hole, showing that the idea of motion was to be represented.

The curved Triskelis on a fragment of ash wood, found in a Crannog of Scotland, and in fact all the ogee Suastikas, wherever they appear, convey this idea of revolving motion.

It has been maintained by C. C. Willoughby that all of these figures symbolize the wind, and as proof of it reference is made to the ogre *Susutka*, among the Siouan tribes, but the coil is more properly a wind symbol, while the *Susutka*, at least among the Navajos and the Puchias, refers to the sky divinities, the terraced caps, and feather head-dresses and black backs, symbolizing the clouds, but the spear in the hand symbolizing the lightning. The Cosmic symbol also confirms the thought that the hooped cross symbolizes the revolution of the sky, rather than the wind. This symbol generally consists of a circle and a cross, though among the Mayas there are four cross-hatched loops outside of the circle, and four alternate loops, thus making a Maltese and a St. Andrews Cross, the interior of the circle sometimes being without a figure.

We may say that the spiral and loops on the Mound-builders' pottery and the loops in the serpent gorgets may represent the wind, but the swastikas which are used in the circles are more likely to represent the revolving sky.

### BOOK REVIEWS.

*The Rulers of the Sea. The Norsemen in America from the Tenth to the Fifteenth Century*, by Edwin Neukomm: Illus.: Pub. by Estes & Lauriat, Boston.

This book begins with expressions of surprise, felt by the author upon visiting the great library at Rouen, France, when he was introduced to the president of the Geographical Society, M. Gabriel Gravier, and found that so much had been collected and written upon the subject of the voyages of the Norsemen, and especially of their visit to the coast of North America.

He spent all the spring, the summer and autumn in sifting the material furnished, and seems to have written this book with a running pen, not stopping to clear up the disputed points or to unravel the knotted questions, seeking only to give the most striking incidents in these ancient voyages.

He has made an interesting book and furnished a narrative which will be valuable to many readers. The style is not that of a critical historian but that of a narrator, who is bent upon making his story impressive and fascinating. There is, however, enough of the critical about it to make the book reliable in its facts, and the reader who wants to know about the voyages, in their succession, and learn about the connected events will find the book valuable. There is no part of American history that is really more fascinating than this. It fills the same place which the story of Homer does to the history of Greece, and the same as the story of Hengis and Horsa does to the history of England. The story is full of adventures, the characters are somewhat shadowy and uncertain, but the records are sufficiently definite to bring before us the dim outlines of the coast from Greenland south to the mouth of the St. Lawrence, the Island of New Foundland and as far as Martha's Vineyard, and to give us pictures of the Esquimaux, who then dwelt upon the shores of New England, and frequently visited the places that have since become historic.

There is no discussion in the book in reference to the places, which some have



sought to identify as the "Land Falls," though the narrative is brought down to the time of the Zeno brothers, and the voyages which immediately preceded Columbus.

The publishers have furnished some beautiful and striking illustrations which befit the story, and make the style of publishing and writing harmonious.

There are many young persons and lovers of history who will take up this book and be charmed with it, and it may lead to a further study of the early voyages. The work upon the whole is to be commended.

*History of Ancient Peoples.* By Willis Boughton. Published by G. P. Putnam's Sons, New York., 1897.

The author of this book presents a novel theory in reference to the human family and its division into races, and the peopling of the earth by the races.

His opinion seems to be that the first man was black, and that his descendants constituted the black race. The differentiation of the genus homo was wholly prehistoric, and the "black belt" was quite extensive. It embraced a large portion of Africa, the greater part of southern Asia and nearly all of southwestern Europe. The primitive home of the black race is identified with that of primitive man, of which the Constadt and Cromagnon are good specimens.

A new race, however, originated and spread over the globe, claiming at the hands of its predecessors all the knowledge and advancement that they had been able to wrench from nature. This is called the Yellow race, and to it belonged the Furfooz, Neolithic man in Europe, the Basques, the Etruscans, the Hittites, the Chinese, the Japanese, the American Indians, Huns, Mongols and Turks. In other words all of that class of people which sometimes go under the general name of Turanians.

The American Indians are neither blacks nor whites but they belong to the same stock as the Sumero Accads of Southern Asia and the Hittites of western Asia as well as the Chinese of eastern Asia—a stock which is now acknowledged to have given the earliest civilization to the world.

The White race is the one with which we are the most familiar, as it is the one with which ancient history begins and with which history is likely to end.

The White race, according to this author, includes the Hamites, the Semites and the great Aryan race or the Indo European. The Hamites are divided into Libyans, Ethiopians, Egyptians, including the Hyksos kings.

The Semites include the Syrians, Phœnicians, Carthaginians, Hebrews, Canaanites, Elamites and Assyrians—a history of which race is contained in the Scriptures.

This book is divided into four parts as follows: Part I, The Earth People. Part II, The History of the Yellow Races. Part III, The Hamites. Part IV, The Semites; and a brief history is given under each head. The author has availed himself of the latest discoveries and researches in reference to prehistoric man and the ancient races. He has drawn extensively from the different writers whose names have become well known, though many of the best writers in the different departments have not been studied, at least their names are not mentioned. This gives the book the character of a summary of recent information, rather than a book of original research.

It will be convenient as a hand-book to the reader who wants to know the latest views as to the different races of the East. The most unsatisfactory part of it is that which relates to the earliest races and especially the prehistoric, for

no one can tell what the color of these races was, as they are known only by their relics, a few bones and skulls which have been discovered in gravels and caves.

The theory has been advanced that the Antediluvians were identical with the Paleolithic race of Europe, the Post-diluvians were identical with the Neolithic race, the Historic races were all whites, the blacks having survived the "flood" which was local; the "yellows" having transmitted the inventions and arts which existed before the Flood.

It is a very pretty theory, but the question is, is it borne out by the facts?

The publishers have illustrated the book with many cuts, which include scenes in America, in Egypt, Mesopotamia, Babylonia to show the extent of territory which was covered by the different races, and is embraced in this sketch of the earliest or most ancient history of mankind.

*The Story of the Nations of British India.* By R. W. Frazer, L.L. B., T. C. S., Lecturer on Telugu and Tamil, University College, New York. G. P. Putnam's Sons. 1897.

"Who the first inhabitants of India were, we know not. The only records they have of their existence are the chipped flint, or quartzite arrow-heads, scrapers and axes dug up to-day in the alluvial deposits of the great river valleys." "These primeval people were gradually driven by other invading races to the lofty mountain ranges, where their descendants still live; nearly twenty millions of human beings, consisting of these living fossils of primeval times, have been grouped together and called Dravidians."

Their language shows affinities with the Ugrian, Finnish, and the ancient Media, seen in the Behistun Inscriptions. They are supposed by some to be the survivors of a great race which inhabited a submerged continent, between India and Madagascar.

The first invading race was the Aryan, who entered India about the time of Abraham, some 2000 years B. C. They gradually conquered "the land of the five rivers," and spread the civilizing influence of their high culture over the entire East.

The system of caste had its origin from this conflict between the races.

There were waves of population and of religion, which afterward swept over the region: first the Greek, next the Mohammed, and last the Britton, who gained the ascendancy.

It was after the time of the discovery of America that India really became known to the world, though the route by which eastern products could reach the cities of the Mediterranean had been kept open for many centuries.

The Portuguese were the first voyagers who reached the coast of India, which Columbus set out to find.

Vasco de Gama rounded the Cape of Good Hope and sailed eastward into the Indian Ocean. The news of the wealth of India reached England through letters of Thomas Stevens, the first Englishman who ever visited India, who became president of the Jesuit college.

The Dutch were monopolizing the trade of the East, but the merchants of London received the "Charter of Incorporation of the East India Company" on the 31st of December, 1600 A. D., and soon became the ruling power. The Mogul emperors reigned up to the year 1707. They were the descendants of Tamerlane, and had amassed great fortunes. The fiercest contest was not with

these emperors alone, but with the French, who were dictators over the affairs and ruled in the name of Chanda Sahib.

The capture of Calcutta and the terrible tragedy of the "Black Hole" occurred about 1750. Lord Robert Clyde was the ruling spirit. The name of Lord Hastings came into great prominence about this time and the history of British India began.

This history has become known to all English speaking people through the essay of Lord Macaulay and the Memoir of Hedley Vicars, and other books. The readers of this book will, however, find a summary of the History of India from the beginning, which is very instructive. It is comprehensive and full, and very graphic throughout, but space will not permit further sketch of its contents.

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*The Suastika, the Earliest Known Symbol and Its Migration, with Observations on the Migrations of Certain Industries in Pre-Historic Times.*

From the Report of the U. S. National Museum for 1894, Washington, Government Printing Office, 1895.

The subject of the migration of Symbols has great interest to the American Archæologist, especially as it has a direct bearing upon the mooted question of contact with other countries in pre-historic times.

This treatise is likely to settle the question and to convince the most skeptical that there was such a contact.

The author begins with a description of the different forms of the Suastika, which are found in Oriental countries. He includes under the general head the "Spiral Volute," some of them four armed, some of them three armed (called the triskelis), five armed, some with ogee arms, and the circle in the middle; others alternating with a Greek fret and rosettes. He quotes from the Count d'Alviella, whose book, *La Migration des Simboles*, has already become a standard authority, also from Dr. Schleimann, Prof. Sayce, Dr. Brinton, and others, and shows that the Suastika was found in Cyprus as early as 1300 B. C. in Egypt, in Greece, in Troy, in Cracou, Russia, in Japan, Corea, China, in Thibet, Bombay, India, in Chaldea, in Babylonia, in Armenia, in Africa, and many other historic countries.

As to pre-historic Europe, he refers to the "hut urns" of the Etruscans, the pottery of the Swiss Lake Dwellers; the Runic inscriptions of the Scandinavians; bronze relics of Ireland; fragments of wood from the Crannogs of Scotland; the fibulas or bronze brooches of Scandinavia. All of these show that the Suastika was used in the Neolithic age, and during that and the bronze age, was distributed throughout the Eastern hemisphere. It was common in America during pre-historic times and was very prominent among all the Neolithic relics which have been discovered, some of which have the marks of native handiwork, but a few show the influence of an intruded symbolism. Many Suastikas had been gathered from the mounds long before those in Ohio, and archæologists had been familiar with them for years.

Some of them were found engraved upon the shell gorgets, taken from the mounds in Tennessee; others had been noticed in the pottery ornamentation of the Pueblos and Cliff-dwellers, and the sand paintings of the Navajoes, and in the carved altars of the Mexicans, the woven garments of the Peruvians, and, in fact, in nearly every part of the American continent. In all of these the Suastika seems to have borne the American touch; for it is placed upon material which was characteristic of the different sections;

shell and copper having been used by the Mound-builders; colored sand and feathers by the Cliff-dwellers and Navajoes; sculptured stone and stucco by the tribes of Mexico; wrought gold by the tribes of Nicaragua; woven cloth by the ancient Peruvians.

The Suastika is always a mythologic symbol in America and is associated with other symbols which are myth bearers. One objection to the migration theory might be raised, in the fact that there are so few Suastikas in the northwest coast. Still the migration may have taken place by way of Polynesia, and it may be that other symbols were myth bearers for these peoples.

Dr. Wilson has found an engraved shell, in the museum at Washington which was taken from the Great Toco mound in Tennessee, on which is seen a seated figure, which reminds one, at once, of Buddha, the "hero god" whose worship has extended all over Asia.

The style is different from other aboriginal images, the slim waist, the winged arms, the crossed legs, the long feet, the triangular dress, the general attitude and appearance.

The fineness of the work in the bone carvings reminds us of the bone carvings of the Japanese, though the copper stencils in the Hopewell mound which contain clover leaves as symbols, remind us of the ornaments which prevailed in the churches of Europe in Mediaeval times. Dr. Wilson maintains, strangely, that the Suastika was unknown in the time when the Dutch and English traders were in the Mississippi valley, and regards it unlikely that it was introduced by the traders or missionaries, but the fact that the early missionaries were very familiar with European symbols, as it is not unlikely, that American savages would borrow them and mix them with their own.

Dr. Wilson thinks that there may be a duplication of the cross by distant peoples, but disputes the point that the Suastika is a design, which was likely to be invented anywhere, and considers it absurd that it came from basketry.

The migration of classic symbols, such as the "Sacred Tree," the "Sacred Cone," the "Nile Key," the "Winged Globe," the "Double-Headed Eagle" the "Greek Fret," throughout Europe, Asia and Africa, furnishes an argument in favor of the Asiatic origin of the same symbols when found in America.

If these symbols in Scandinavia and Europe are traced back to an early Aryan origin and are everywhere expressive of the cosmogonies of the East, why should the symbols, when found in America, which have the same general form and significance be ascribed to an independent aboriginal origin?

This monogram will be prized, no doubt, as it is the best that has been written upon the subject.

We have received the following books from the publishers, and will send them in the next number:

*Symbol and Fret*, by Mrs. J. H. Philpot. MacMillan Company, New York.

*Symbol and Fret*, by S. Wells Williams, LL. D. Charles Scribner's Sons, New York, 1897.

*Symbol and Fret*, by Dr. Chrestos Tsountas and J. Irving Manatt. Plimpton Press, Houghton Mifflin Company, Boston and New York, 1897.

*Symbol and Fret*, by Dr. Chrestos Tsountas and J. Irving Manatt. Plimpton Press, Houghton Mifflin Company, Boston and New York, 1897.





King Ur-Ninâ of Lagash, surrounded by his sons and pages.

Reprinted in *Recent Research in Bible Lands*, from de Sarzec, *Découvertes en Chaldée*.

THE OLDEST PICTOGRAPH KNOWN—3200 B.C.





Hittite relief, with inscription, from a mound near Malatya, found May 27, 1891,  
and now in the Imperial Museum at Constantinople.

*From Recent Research in Bible Lands*

THE  
*American Antiquarian.*

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A CANON IN PRE-HISTORIC ARCHÆOLOGY.<sup>1</sup>

BY PROF. THOMAS WILSON.

My text for the evening is, that the more widely extended the search for pre-historic man is, the greater will be found the area that he occupied, and the more profound the excavations, the greater will be found the antiquity of that occupation.

This is not meant to indicate that the pre-historic man occupied all the area of the world, nor that, having once discovered his occupation of a certain area, an extension of the investigation would necessarily show an extension of the area.

The theory maintained is that, having shown his occupation of a certain locality, investigations made in other localities, other countries or in other portions of the same country, will show his increasing and wider distribution and occupation.

It is a proposition announced by the foremost pre-historic archæologists, that the pre-historic man is not found in proportion to the number of sites occupied by him, nor by the density of his population, nor yet by the number of objects which he has left, but is, on the contrary, in proportion to the number of seekers. The world has hardly yet awakened to a just appreciation of the extent of the occupation of the earth by man during pre-historic times, nor yet to his antiquity.

I shall use as illustrations of this proposition the reports lately made of the investigations by our archæologists into two countries, neither of which have heretofore been sup-

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<sup>1</sup> Delivered before the Anthropological Society, Tuesday, March 16, 1897.

posed to have had very intimate relations with that antiquity which, in Western Europe, has been called "pre-historic."

The first country is Babylon, the investigations of which by modern archaeologists have resulted in pushing the historic period back to a much greater antiquity.

The other country, the pre-historic occupation of which has been doubted if not denied, is Egypt, and is the result of investigations and excavations lately made by the Director-General of Antiquities in charge of the Gizeh Museum.

The discussion of the first locality belongs to a branch of science in which I have not heretofore been greatly interested. I bring it to your notice this evening to assist in establishing the truth of the proposition with which I set out, that is, the more we investigate pre-historic man, the more we find an increase, both in area and in antiquity, of his occupation of the earth. For a long time, England led the way in excavations of the buried cities and monuments of Babylonia. To her is due the discovery of the great city of Sippara, the ancient city of the Babylonian sun-god, which, with other excavations in the neighborhood, produced the mass of clay tablets in the British Museum. The Germans undertook the exploration of two cemeteries, and, for the first time, showed that the Babylonians burned their dead, and the Babylonian sepulchres, instead of containing so many objects of every-day life, as in pre-historic graves by which we could largely trace the history of the people, were found to contain little except charred and shapeless remains. The French conducted the excavations at Telloh, in the extreme south of Chaldea, and made an exploration of the mounds of that city, and gradually a Babylonian city, the name of which was Lagas, and whose origin is lost in the mists of antiquity, has been brought to light. It yielded an immense number of monuments of all kinds, the most striking of which are the early statues of diorite now adorning the Louvre, of which Gudea is the principal. But the most valuable of its treasures were about thirty thousand clay tablets nearly five thousand years old. The Americans were represented in Babylonian excavations by the party of which Prof. Heilprecht and Dr. Peters and Mr. Haynes, of the University of Pennsylvania, were at the head. Their principal center of investigation was at Nippur, in northern Babylonia. It was one of the earliest seats of Bablonia religion and civilization. Its greatest temple, dedicated to the god called by the Sumerians Mul-lil or El-hil, "the lord of the ghost world," was co-eval with the beginnings of human history. The American work was begun in 1888

with about two hundred Arabs as laborers. The site was chosen and surveyed, trial trenches were dug, and systematic explorations made. After certain suspension, the work was renewed in 1888 with greater vigor than ever. About thirty-two thousand tablets and inscribed fragments have been found, some of them going back to the earliest epochs of Chaldean history. The excavations at Nippur were carried deeply and widely enough, not only to reveal the history of the city, but also to open up a new vista of forgotten history of civilized man, and it has been carried back into ages which, a short while ago, were undreamed of. Prof. Heilprecht does not hesitate to date the founding of the Temple of Baal, the first settlements in Nippur, to have occurred between 8000 and 7000 B. C., possibly earlier.

The first king of Babylonia, then called Kengi, brought to light by the excavations at Nippur, is En-sag-ana. The population was Sumerian, speaking the Sumerian language, and was at that period without any trace of Semitic language or people. Nippur was the religious center of Kengi, and Mul-lil, whose temple was at Nippur, was the god of Sumerian worship.

Kis, or Kish, or Cush, or Kosh, lay to the north, and constant war existed between it and Kengi. Kis was suzerain to the Semitic nomads of Mesopotamia, the "Land of the Bow," as it was called, whose Bedouin people were the archers represented on the Egyptian monuments. Other Kengi kings invaded and captured Kis, and the tribute paid for her release has been found in the excavations at Nippur.

But Kis arose in her might and, calling on "the hosts of the Land of the Bow," smote Kengi, and its kingdom passed away. Lugal-zaggi-si, the King of Erech, son of the Sumerian high-priest of the "Land of the Bow," was the victorious invader and conqueror. He occupied Nippur, and the many inscriptions on the commemorative vases found in the temple of Mul-lil at Nippur, set forth his foundation of this early Asiatic Empire.

The dynasty of the King of Erech was succeeded by that of Ur, and it in turn by that of Lagas, whose kings represent the closing days of Sumerian supremacy.

With the empire of Sargôn, the Semitic age begun. Its date has been fixed at 3800 B. C. This is in plain historic terms. Prof. Sayce is authority for the statement that from the translation of the clay tablets found by the three archaeological expeditions, the scholars of present times are as well versed and have as complete knowledge of the culture, manners, customs and, in fine, the history of the Babylonian



to make inspection of them, does not appear, but it is these library places of deposit to which we are now mostly indebted for the information concerning the country. It seems to have been a custom, a prototype which modern people have followed, of writing, at the close of the reign of each king, a chronological history of the events happening during the reign, with their dates. These chronological tablets are of high importance, and afford the greatest aid in constructing the history of those countries. With the tablets of contracts, inventories, tax lists, etc., which give their respective dates and, curiously enough, correspond in a remarkable degree with the chronological tablets, one acting as a check upon the other, the scholars are able to obtain a fairly correct knowledge of these dates of antiquity. The earliest fixed date in Babylonian history is that of Sargon, of Akkad, and of his son, Naram-Sin. Their date, 3800 B. C., was assigned many years ago, and the modern discoveries verify it. According to our prior knowledge, Sargon belonged to the first dynasty, or was the first king of Babylonia. But the modern discoveries show different. Sargon, instead of belonging to the "gray dawn of time," must, as Prof. Haynes says, be regarded as representing the "golden age of Babylonian history." For some of the proof of this, they turn to these tablets. They have been arranged in a series which, from the rudeness of the pictorial or hieroglyphic writing of the earliest tablets, shows a gradual improvement until it reaches its apogee in the reign of Sargon and his son. Prof. Sayce says:

Between the cuneiform hieroglyphs of Sargon or Naram-Sin and that of Nebuchadnezzar there is comparatively little difference; between it and the script of the early text found by Baunes and Sarzec there lies the difference between writing of a child and that of a grown man.

The Babylonian seal cylinders tell the same story. There is the continued improvement until it is declared, also by Sayce, that the most exquisitely worked Babylonian seal cylinder is one made in the reign of Sargon, and that it represents, so far as we know at present, the highest point attained by the gem cutter in the ancient Oriental world. It must be a delight for the pre-historic archæologist to study here, in the almost unique instance, a pre-historic language and to watch its transformation by contact. The dynasties of Babylonian kings prior to Sargon were Sumerians and spoke the Sumerian language. Their writing of it was in the cuneiform characters. Sargon and Naram-Sin were Semites and spoke the Semitic language. Here arose the contest, so interesting to trace, between the languages of the conqueror

and the conquered. It is likened unto the similar contest between the Norman and French in Normandy, and again between the Norman-French and the English when William conquered England. As in these cases, the result was a compromise, the amalgamation, and finally a mixed language made up of the two constituent elements. The cuneiform characters maintained their supremacy, but the sounds they represented and the words they spelled were transformed and became Semitized in the process. Generations of Sumerians and Semites dwelt side by side, borrowing from and lending to each other, mutually adopting their forms of expression. This transformation could be followed a long way, and forms the basis of pre-historic science as affected by linguistics as an aid to archæology, but I have no time here.

It is conceded that there have been differences of opinion in regard to the dates assigned to some of these Babylonian objects. It seems that the expeditions are not altogether agreed in their conclusions, and that there is even greater disagreement among some of the members of the expeditions, and therefore, the statements as to date of high antiquity must be made with reserve. However, this reserve should apply to nearly all first statements and discoveries in regard to the antiquity of man and the effect of the evidence thereof.

My branch of archæology has no application to Babylon, and I make no special pretention to accuracy with regard to it. However, the facts in regard to the investigations in Babylonia, independent of all differences and discussions, are sufficient to justify my use of it as a proper illustration of the proposition for which I am contending.

The geography of the country, the wars and conquests by which the Babylonian Empire was enlarged, the different dynasties and the lists of kings, the languages and the improvements therein, are all questions which I cannot go into now and here. They all, though, tend in the same direction and are equally evidence of the same fact.

It seems certain, as a result of these excavations, that the increase of our knowledge as to the early existence of written languages and the ability to make history therefrom, has been pushed many thousand years into the past—so far as that 3800 years B. C. is fixed as the "Golden Age," and that the long line of essays and efforts and inventions made in the arts of writing and cultivation of literature which culminated in its successful accomplishment in the time of Sargon, may be traced one or two thousand years earlier and yet be far from its beginning.

Thus is demonstrated the proposition with which I started, that the wider our investigations, the more extended are shown to have been the areas occupied by early man, and the deeper our excavations, the greater his antiquity.

One may ask how all this was done and how these questions, so profound and abstruse and, at the same time so doubtful and uncertain, can be determined with anything like the certainty which has been attributed to them. I may explain by using the well-known Hill of Hissarlik as an illustration. It was excavated by Dr. Schliemann, of whom we all know and who I regard as one of the most renowned American citizens of this century. He was born in the lowest round of the social ladder—there is no boy at our public schools who has not equal opportunity of accomplishing all that Schliemann did. He became excited over descriptions of the Trojan war recited to him before he was thirteen years of age by a drunken apprentice to a miller, and he then determined that, if his life was spared, he would settle the question of the site of Troy. Many men may have done as much excavating as he, but they have either been paid for it, or the money has been contributed by the Government or private persons. But Schliemann, poor as the traditionalary "church mouse," went to work to first make for himself the money to be used in excavating. At the age of forty-five years, he found himself the possessor of a fortune—almost, if not quite, a millionaire, and he turned his steps toward Greece and commenced his work, paying all the expenses himself.

He attacked the Hill of Hissarlik with pick, spade and shovel, and by trenches and slicing perpendicularly as well as latterly, he found the debris and remains of seven cities, each succeeding one built upon the site of its predecessor. The first and second cities were at a depth of from 45 to 52 feet, the third 23 to 33 feet, the fourth 13 to 17 feet, the fifth 7 to 13 feet, the sixth was the Lydian city of Troy, and the seventh, the Greek Ilium, was near the surface.

Complementary illustration of the mode of determination of these difficult questions is shown in the what has been called in pre-historic archæology, the "Great City of Morges." The modern town of that name is situated on the north bank of Lake Geneva and dates from an early period in Frankish history. Within the past few years, it has been found that there were three settlements of Lake Dwellers which occupied consecutively the lake in the immediate neighborhood. The first, out in the water forty or fifty feet and off to the left or east from the wharf at Morges, has furnished absolutely



nothing but what belonged to the neolithic or polished stone age, not a single piece of bronze or metal has been found here. About the same distance off to the right or west from the wharf at Morges, farther out in the lake, was found another settlement larger than the first, the implements and objects of which all belonged to the bronze age. It was highly improbable that these should have existed contemporaneously; the first one, the settlement of neolithic or polished stone age, had evidently come to an end before the second one, that of the bronze age, was begun.

With this short explanation, some idea can be had of the methods to be pursued by the which these abstruse questions in archaeology can sometimes be determined with great certainty and satisfaction.

Egypt furnishes the second illustration of my proposition. For many years Egyptologists devoted themselves exclusively to a study of Egyptian culture and were engaged in deciphering the inscriptions, translating the writings and putting together the history of Egypt.

In all this, little or no question was made as to whether the pre-historic ages, such as known in western Europe, of stone and bronze, with its accompanying implements and utensils, all without written language, did or did not exist in Egypt.

The earliest discoveries in this direction tended toward the existence of the paleolithic period and were made by General Pitt-Rivers, our Prof. Henry W. Haynes of Boston, and one or two others.

The National Museum is the fortunate possessor of a large portion of the paleolithic implements discovered by Prof. Haynes, and for which he was honored by the French Academy for the Adv. of Science, by the award of a medal.

In all the investigations, the neolithic period seems to have been overlooked or forgotten, and as it is a proposition as true in archaeology as in anything else, that a man finds only what he seeks and sees or recognizes only what he knows, the great army of Egyptologists, in their search for statues and gods and bricks and hieroglyphs, neglected or overlooked the traces of the neolithic period.

Mr. Flinders Petrie, in 1889, made one of the early discoveries of flint flakes at Kahun. I was fortunate enough to meet Mr. Petrie on his return, and had the pleasure of examining his collection in London. I invested fifty dollars in the purchase of specimens from him, and now have the pleasure to show a series of the flint flakes which he found. Some of these have serrated edges and are worn and bright-

ened by use as sickles for the cutting of grain. One of these implements was found in a more or less complete state, showing the frame or back to have been of wood with a 7-shaped notch cut longitudinally in its front edge, wherein these flakes were inserted and fastened with asphaltum or gum. They thus formed the cutting edge of the sickle which was of much the same shape and was used in much the same manner as the old-fashioned steel sickle of our grandfathers' time.

Flinders Petrie claims to have found a new race in Egypt. In his last report, he says :

A new race has been found, which had not any object of manufacture like the Egyptians; their pottery, their statuettes, their beads, their mode of burial are all unlike any other in Egypt, and not a single usual Egyptian scarab, or hieroglyph of carving, or amulet, or bead, or vase has been found in the whole of the remains in question. That we are dealing with something entirely different from any age of Egyptian civilization yet known, is therefore certain. That this was not a merely local variety is almost certain, as these strange remains are found over more than a hundred miles of country, from Abydos to Gebelen. Our own work was near the middle of this district, between Ballas and Negada. \* \* \* \* \*

The race was very tall and powerful, with strong features; a hooked nose, long pointed beard, and brown wavy hair, are shown by their carvings and bodily remains. There was no trace of the negro type apparent, and in general they seem closely akin to the allied races of the Libyans and Amorites. Their burials are always with the body contracted, and not uncontracted, lying with head to south and face to west, just the reverse of the contracted bodies at Medum. Although most of the graves have been disturbed, yet sufficient examples remain untouched among the 2,000 graves opened by us to show that the bodies were generally mutilated before burial. One large and important tomb showed four skulls placed between two vases on the floor, a separate heap of loose bones of several bodies together, and around the sides human bones broken open at the ends and scooped out. \* \* \* \* \*

Metal and flint were both in use by these people. Copper adzes show that the wood was wrought, and finely carved bulls' legs to a couch illustrate the work. Copper harpoons were imitated from the form in bone. Copper needles indicate the use of sewn garments, and the multitude of spinning-wheels in the town proves how common weaving must have been. Flint was magnificently worked, far more elaborately than by the Egyptians of any age. The splendid examples in the Ashmolean and Pitt-Rivers Museums at Oxford are now seen to belong to this people. Both knives and forked lances are found. Stone vases from all material, from alabaster to granite, were favorite possessions. They are beautifully wrought, but entirely made by hand, without any turning or lathe work. \* \* \*

Pottery was the favorite art of these new people: the variety, the fineness and the quantity of it is surprising. Few graves are without ten or a dozen vases, sometimes even as many as eighty. Most of these are of the coarser kinds, merely used for containing the ashes of the great funeral fire;

for, though the bodies were never burned, a great burning was made at each funeral, the ashes of which were carefully gathered and preserved, sometimes as many as twenty or thirty large jars full. [See the probable Amorite custom in 2 Chron., xvi, 14; xxi, 19; Jer., xxxiv, 5]. The varieties of pottery are polished red hematite facing, with red and black tops (due to deoxidation in the ashes), and the light brown with wavy handles, like the Amorite pottery. A later stage of pottery was of coarser brown and of much altered forms, copying somewhat from the Egyptian types of the Old Kingdom. The wavy handle jars went through a series of changes, forming a continuous scale by which their relative ages can be seen. Animal-shaped vases and many curious sports are found in the red-faced pottery. Besides these forms, three kinds of pottery seem to have been imported: buff vases, imitating stone, with red spirals and figures of animals and men; red polished vases, with figures of animals in white; and black bowls, with incised patterns, most like the earliest Italic pottery. Besides these designs, a great variety of marks are scratched on the local pottery, but not a single hieroglyph or sign derived from Egyptian writing has been found. Another fact, showing the isolation of these people from the Egyptians, is that all this fine pottery is hand-made: the wheel was unknown.

The source of this new race cannot be discussed until the hundreds of skulls and skeletons which have been obtained have been brought over and studied. Though some objects point strongly to an Amorite connection, others indicate a western source, and it must be remembered that probably the Amorites were a branch of the fair Libyan race. The geographical position is all in favor of the race having come into Egypt through the western and great Oases, for the seventh and eighth Egyptian dynasties were still living at Memphis, showing that no people had thrust themselves up the Nile Valley. \* \* \* \* \*

On the top of the great plateau, 1,400 feet over the Nile, I found the untouched home of paleolithic man, strewn with wrought flints, some of which are the finest of such work yet known. A later style of flints were also found embedded in the gravel of the old high Nile, thus extending the discovery of General Pitt-Rivers in the Theban gravels.<sup>1</sup> \* \* \*

But the person to whom the greatest credit is due for the investigations to which I refer, is Mons Jacques de Morgan, the Director-General of Antiquities in Egypt and the head of the Gizeh museum.

He has made an extensive and somewhat systematic investigation in this regard, with the result entirely satisfactory, establishing beyond question, the existence of a neolithic or polished stone age in Egypt. He investigated thirteen stations in Lower Egypt and seventeen in Upper Egypt. He has by no means covered the entire ground nor completed his work. He has only made a preliminary investigation with the result indicated. The further investigation will be continued along the same line.

I am personally acquainted with Mons. de Morgan and think I can properly certify to his knowledge in such affairs.

<sup>1</sup> W. M. Flinders Petrie, Academy, April 20.

his competence for the work and his entire reliability and conservatism in making reports. But this is not all. He has kindly sent to the National Museum, a collection of one hundred and eighty-four specimens of stone implements, principally flint, all of which belong to the neolithic period. The implements found and reported by him from these various pre-historic stations are nuclei, hammers, hatchets, knives, scrapers, arrows and spear-heads, saws and sickles, points and drills in stone, bone and ivory, pestles, collars, bracelets, combs, pins, pottery, figurines and stone vases. Specimens of all these were not sent by Mons. de Morgan, but many of them were, as will be seen by the display on the table. But his report of his investigation called "*Recherches sur les Origine de l'Egypte*," lately published in Paris, has just been received by the Museum, and it contains full and extended descriptions of the finding of these various implements and utensils. A comparison of them with the objects found in other countries, leaves no doubt as to the existence in Egypt of the culture peculiar to the neolithic people.

Thus is again demonstrated the truth of the proposition with which this paper commences, that the wider our investigations the more extended are shown to have been the areas occupied by early man, and the deeper our excavations the greater is shown to have been his antiquity.

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## THE PRE-HISTORIC ROUTE FROM ASIA AND THE OCEANIC ISLANDS TO THE WESTERN COAST OF AMERICA.

BY J. CRAWFORD, B.

Judge J. P. Wickersham,<sup>1</sup> Professors Cyrus Thomas<sup>2</sup> and Otis T. Mason<sup>3</sup> have, since January, 1894, cited so-called numerous facts and evidences in reference to the well known present existing sea current routes in the Pacific Ocean along the Equator and the western coasts and islands off the coasts of Hindoostan and Malay-China, and thence north and northeastwardly to the west coast of southern Alaska, British Columbia, California and Mexico; from whence branch currents go south of west and southwest to the Sandwich, Polynesian and Micronesian groups of islands, which are the present courses of commercial transportation on the Pacific Ocean, and for many centuries past seem to

<sup>1</sup> See the AMERICAN ANTIQUARIAN, Vol. XVI, p. 325.

<sup>2</sup> Ibid., Vol. XVI, p. 3; again Vol. XVI, p. 99; Vol. XVII, p. 44; again, Vol. XVII, p. 101; and again, Vol. XVII, p. 191.

<sup>3</sup> See the American Anthropologist, Vol. VII, p. 273.

have been the route over which man has travelled between Asia, America and the above islands.

The above eminent scientists and writers, however, overlook some important aboriginal and other facts in connection with these ocean routes. The main North-Pacific current from the Aleutian islands does not leave the coast of California, nor Mexico, nor of Guatemala until it reaches the southwestern point of that State, when it turns from its southeastwardly course to nearly southward until it reaches the equator. It flows west from Nicaragua one hundred miles or more, leaving between it Nicaragua and northern Costa Rica a very rough sea. This current may have borne people from Asia, but it was probably too choppy and rough to allow any frail, large, open canoe to cross from the Behring Sea current to Nicaragua or to northern Costa Rica. Therefore, the above writers have failed to account for the probable origin of the sculptors of the stone images of men of Mongoloid features that can now be exhumed from fifteen to twenty-five feet beneath the stone statues of men of Nahuatl or Aztec type found on the island of Ometepe-Madera in lake Nicaragua and at San Pedro de Lobago south of that lake.

Their theories also fail to account for the origin of the people who carved the stone images of Mongoloid type found on the island of Momotombito, in lake Managua, Nicaragua, *which are cemented to other rocks* by the seashore drift that was deposited at the close of the subsidence of that island which occurred toward the close of the Champlain geological epoch.

The seashore drift of that epoch which fastened the statues to adjoining rocks indicates the time when they were sculptured, which was most probably done by remote ancestors of the Amerrique Indians, and silences all questioning of the existence of man during the last Glacial or Ice period.

As the land of Nicaragua and bed of the adjoining oceans must necessarily have been elevated to an altitude of 800 to 1200 feet above the present level of land and sea, it would have formed either a continuous land route from Asia and Polynesia to Central America, especially to Nicaragua, where evidences exist of that elevation, and its consequent ice age, or of a nearly connected belt or chain of islands between the two continents about latitude  $14^{\circ}$  to  $15^{\circ}$  north. Such an elevation would therefore have caused very different ocean currents from those existing today. The ancestors of the Chibchas Indians who carved out of stone images of Mongoloid type about the headwaters of the Orinoco river and among the Peruvian mountains must be accounted for otherwise than by supposing that they migrated from Mexico; for their works of art are found several feet beneath the sculptured images whose features resemble the Nahuatl or Aztec type.

The ancestors of the Carib Indians must be accounted for by

ome other hypothesis than that of Mexican emigration. Those till living are light brown colored, well formed people resembling the present Japanese. They neither resemble the Aztecs, nor Mayas of Mexico in features, nor are their customs similar. Columbus discovered them about 1498 or 1500. They extended long the Pernambuco and Venezuelan coasts, and in their wanderings northward conquered and colonized the Antilles Islands reaching even into Florida. They were able seamen and unto his day are the best navigators along the rough Caribbean sea coasts, and that choppy sea of frequent unheralded storms and squalls.

Writers discussing the subject of the migration of North American aborigines should cease to include with Mexico all of Central America in their sweeping declarations. The wonderful architectural and distinguishing features of the Aztec civilization cannot be traced further south than Copan in northwestern Honduras. Small bands of the Aztec people, however, entered Nicaragua at about latitude 15° north and moved so slowly that they forgot their own customs, and took upon themselves the usages of the aboriginal people met by them in that country. They ceased to build, as their forefathers had done, and their sculptures came to be but rude and rough imitations of their former admirable carvings. Their attempts to imitate the bold forms of the Amerriques into whose country they came, ended in a rude representation of a mixture of Aztec and Amerrique type which are to be found in super-position as mentioned above on the islands of Zapatera and Ometepe-Madera in Lake Nicaragua.

I cannot therefore satisfactorily account for the pre-historic ancestors of the Chibchas and Caribs in South America, nor of those of the Amerriques in Western Nicaragua. When examining the geological epoch associated fossils of the same zone in the localities where the stone images sculptured by their ancestors are found, without a strong inclination to the opinion that they came almost directly westward from Asia, during probably

the latter part of the last Glacial epoch, over a land route, or over a nearly connected island route, that existed, according to several eminent American and European geologists, at a time when the present attoles and barrier-reefs now numerous in the Pacific Ocean, were extensive, elevated islands and continents in the ocean, whose bed is yet frequently being moved by strong seismic forces into undulations of such high elevations and low subsidences as to drive long, strong earthquake waves from some submarine volcano to high up on the shores of both Asia and the Americas.

## ABORIGINAL REMAINS OF BALSAM LAKE, ONTARIO.

### THIRD PAPER.

Pottery fragments abound on all village sites and on the smaller camp sites around the lake shore. It is unfortunate that none of the several whole vessels that have been found, have been preserved. They were allowed to become broken through neglect. The patterns on these fragments, from the various sites correspond with each other, and to a large extent with those from further east; while other patterns show affinity with those from localities in western Ontario, and south as far as New Jersey, though not so frequently.

The material is clay with an admixture of pulverized granite and mica, the larger vessel being the coarser made. Shells are believed to have been used also, but it is very difficult to distinguish the mica from the shell particles.

On a good many of the pottery fragments the finger marks of the makers can be plainly seen, and attempts at ornamentation with the finger tips leaving the imprint of the nails, are very frequent; these last are generally at the lower edge of the rim marking. Some of the ornamentations show that the clay was pinched between the finger and thumb, and the "tip" of the rims often show crimps or scallops made with the fingers. However, the main ornamentation seems to be groups of parallel lines, incised, and indented rings made by the impression of a small hollow bone. These ornamentations are generally on the portion of the pot between the rim and the shoulder or swell. Then on the swell there are often imprints as if made with a twisted cord. This may have arisen from the necessity of using a cord to hold the pot together while being sun dried, before being baked, especially so in the larger pots. Some of the mouth angles show deep indents running up the outside of the angle, supposedly for the protection from fire of the suspension cord. Dawson says that some of the Hochelagan pots were suspended from knobs on the inside of pot, some of the knobs being moulded in shape of human heads. These heads occur here, and are not to be confounded with the human face pipe, or the human heads surmounting the pipe bowl. Other fragments of pottery show bosses made by pinching from the inside, but not quite through, and quite a common occurrence is the arrangement of

series of groups of three horizontal indents, one above the other, going completely around the pot below the rim markings. Then there is the criss-cross pattern and net pattern, the latter sometimes made with indentations of a notched stick. One rather unique pattern closely resembles the Grecian and the Mexican fret of Wilson, figured in *Pre-historic Man*, p. 30, vol. I. It consists of a row of vertical short lines surrounded by a series of squares, with lines of circular indents above and below. This fragment is part of a panel of a square mouthed pot, and is of denser structure than the ordinary pottery. None of the specimens show that they were made as baskets or by coiling, though some have striæ on the inside as if smoothed by a arrio shell or some such instrument, while others show impressions of a smooth slightly concave object, as if the makers held a polished pebble inside with one hand and patted the clay on the outside with the other till the desired form took place. These impressions are plainly seen in a good many cases. Occasionally raised patterns are observed which correspond with eastern Ontario samples. The corn cob and raised net pattern does not occur. For comparison, observe the Hochelagan styles figured by Dawson in *Fossil Man*; the Vermont, Pennsylvania and western Ontario styles, by Abbot in *Primitive Industry* and the ordinary Ontario specimens in the Canadian Institute Reports.

As the women were the manufacturers of the plastic ware, it is easily understood how the different styles were interchanged by captives, and thus are isolated specimens accounted for. Algonquin squaws might be captured by the Hurons, and after residing with them for some time the fortunes of war or the exigencies of primitive life might put them in the possession of the Iroquois, and so on. These captives' ideas would become assimilated with those of their captors and produce lasting impressions, not only with pottery but with other aboriginal arts and manufactures. This sort of thing was constantly going on all over the continent in all ages. Again, as with the Huron nation, this people may have been sedentary and carried on a trade with pottery with other tribes thus diffusing their ware amongst the surrounding peoples.

The Petuns or "Tobacco Nation" west of the Hurons were so called because they grew tobacco and traded it for various commodities from other nations. This brings us now to pipes.

The clay pipes may be divided into the following classes:

- 1st. The Huron pipe or Cornet type.
- 2d. Human Face pipe.
- 3d. Short, thick pipe.
- 4th. Common rough pipes.
- 5th. Pipes with animal and human heads on the rim.
- 6th. A miscellaneous class.



1st. The Huron pipe or Cornet pattern is very common. It is called "Cornet" from the resemblance to the musical instrument. These are either plain or ornamented with inscribed rings, dots or indents, and are of various sizes, some being extremely large. Then the mouths of these pipes are square or many sided.<sup>1</sup>

2d. Human Face Pipe. These are also of common occurrence. The face generally faces the maker and occupies the whole side of the bowl. Occasionally the features are grotesque and the head is often surrounded with animal's ears. Some samples are double faced—*i. e.*, one at the front of the bowl and one at the back. The features are more or less well defined but represent no particular type of man.

3d. There is quite a common style of pipe, and like the two preceding ones, always well finished. It consists of a short,



HUMAN FACE PIPES.

thick, round bowl at right angles to the stem, ranging from one to two and one-half inches in height, ornamented with inscribed rings and rows of dots.

4th. Is the common rough unornamented, every day pipe, a large number of them being just sun dried.

5th. A class of pipes with animal or human heads perched on the rim of the bowl. Very often the bowl represents the

body, and the limbs are conventionalized on the bowl.

6th. We often come across nondescript pipes that need an engraving to be understood. As a rule the stems are unornamented, and when split open show that in some cases the stem hole was formed by the clay being moulded around a twisted fibre or cord, which, when burnt, left the cord impression plainly even to the fibre of the twist. The snake was often coiled around the pipe as in one example from eastern Ontario, two snakes are coiled around the same bowl.

The majority of clay pipes are well and gracefully shaped and display no small amount of mechanical genius in their making. None are glazed but have instead very smooth surfaces like polished stone. A great many must have been dyed black by rubbing with grease and holding in smoke, as clay burns yellow. The very rough pipes appear to have been only sun dried, then hardened by smoking. Their material is very fine clay, tempered, but no foreign mixture occurs as in pottery. The above styles occur frequently enough to warrant us in classifying them as types.

<sup>1</sup> See Fowell Man and Reports of Canadian Institute.

A grotesque human face is often made by pinching the clay to a point, giving the features a "peaked" expression. One cylindrical clay pipe was taken from an ash heap. It had three unusual features, namely: a flat bottom, a moulded stem hole and an inscribed tally. Pipe bowls that have the stems broken off are often drilled to admit a reed stem.

Stone pipes are not plentiful owing to the abundant use of clay ones. The most frequently occurring style of stone pipe here, and seemingly indigenous is the vase shape. These pipes do not occur in Western Ontario or in the localities occupied by the Hurons and Neutrals as far as is known. They seem to belong peculiarly to this and the adjoining southeastern district.



BEAR PIPE.

These vase pipes, as a rule, are well finished and as true and symmetrical as if turned on a lathe, the material being white stone, marble and different grades of steatite. Occasionally they have peculiarities such as two stem holes on opposite sides, a square mouth, an oval, horizontal section, on one side of the base drawn out to a toe. Generally they are perfectly circular in horizontal section, with more or less contracted neck and flared mouth. The vase is always rounded and as a rule has two small holes drilled to meet each other at an angle for the purposes of fastening the pipe to the stem more

securely, or for hanging an ornament from, or even attaching to the person or owner by means of a cord. The surface is generally highly polished and colored from white to black, the black color being produced by the pipe being greased and held in smoke. Dimensions rarely exceed  $2\frac{1}{2}$  inches in height by  $1\frac{1}{2}$  inches in diameter.

2d type—Square pipe, is generally small, material soapstone. The flat sides taper to a pointed base and ornamented with criss cross lines, or an animal's head in relief perched near the edge of the bowl, the stem hole being drilled about half way down the bowl. Dimensions up to 2 inches in length and to  $\frac{3}{4}$  inch thick.

3d. Animal Totem pipes. This class of new and distinct totem pipe sculpture is very rare, differing from known types and is represented here by the bear and panther pipes,<sup>1</sup> to which are analogous the wolf and monkey pipes from the north shore of Lake Ontario, and the lynx pipe from Muskoka.

The bear pipe is of steatite; color, stained black; length,  $3\frac{1}{2}$

<sup>1</sup> See Fourth Annual Report Canadian Institute.

in. by  $2\frac{1}{4}$  in.; eyes, ears, mouth well marked. Each leg is separate, the hinder pair being conventionalized to correspond with the front ones. The animal is seemingly walking on a branch. There is a groove around the neck.

The Panther pipe is of steatite, mottled greyish green; length,  $4\frac{1}{2}$  by  $2\frac{1}{4}$  in. Same posture as bear pipe. An indentation is on each side of the neck. The eyes are bored through. Ears defined by slight protuberances. Mouth defined by indentations on each side of the jaws. Legs not separated or conventionalized, each pair being "en bloc" and in a natural position, the paws being clumsily imitated. Workmanship not so good as



PANTHER PIPE.

the bear-pipe, tail prolonged and curved under the body with feet grasping it, two stem holes, the larger one below.

Lynx pipe. Similar to the above, but with tufts on the ears.

Wolf pipe. Greenish gray steatite,  $3\frac{3}{4}$  in. long, body rather slender, head long and narrow, prick ears; eyes, mouth, nostrils and dewlaps well defined. Legs were recently broken off and the tail prolonged as in panther pipe. There is a tally inscribed on one side. The stem holes in these pipes are drilled in about the small of the back, the bowls coming out at the shoulders.

4th. Bird Pipes. The eagle pipe is of finely grained Huronian slate of a light bluish green color with dark veins. Length, 5 in. by 2 in. Wings, beak, eyes, feet, well executed. The feet are separate and through both a hole is bored for attachment purposes. The wings are also clearly defined. Bowl hole in the shoulders, stem hole in small of the back. The eagle pipe is undoubtedly one of the finest in Canada, and as it was made of material indigenous to the country, and taken from a grave in the Huron country, it can properly be relegated to that nation.

The other animal pipes may be called "intrusive", their presence being accounted for by their being left by some war party, or obtained by trade or plunder from some distant tribe.

5th. The human figure is represented by one specimen which strongly resembles several in the Ontario Archaeological Institute and elsewhere. The posture is "squatting" and they are supposed to represent persons resting with a burden on their back. The above specimen has its arms folded across the knees; the attitude is suggestive of performing a natural function, but as the Indian did not carve obscene subjects, this can hardly





FIG. 107.



FIG. 108



FIG. 110



FIG. 111

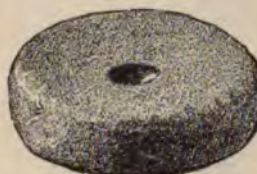


FIG. 112.

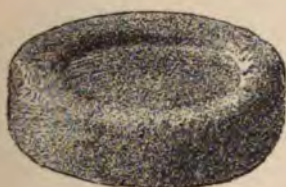


FIG. 113.

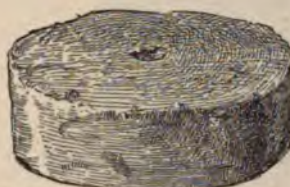


FIG. 114.

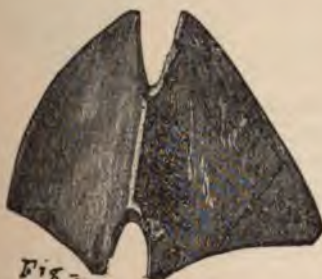


Fig.

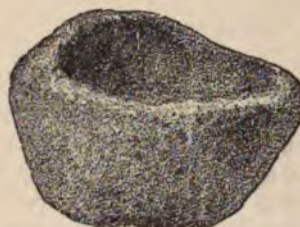


Fig 118



FIG. 116. (Full Size).



FIG. 117. (Full Size).

be so. Material, dark grey steatite, highly polished and as in the animal pipes the mouth of the bowl is between the shoulders and the stem hole midway down the back. The base of the pipe is divided into small squares by incised lines.

The Platform pipe is represented by an unfinished, broken specimen. The bowl is very small and set on a long base of square vertical section, the portion in front of the bowl being broken off. Bowl not excavated, and the stem hole being just started. This may be an intrusive pipe.

There are a few non-de-script stone pipes that seem to show the individuality of the maker. One such, is a massive white



WOLF PIPE.



EAGLE PIPE.

stone pipe, steatite, like an ordinary briar. It has a stem of about three inches in length and shows much use and weathering, for the highly polished surface is much pelted and the mouth piece has deep nicks that were worn in it by the teeth of successive smokers. Only three specimens of stemmed stone pipes occur, the ordinary stem pipe having a stem hole drilled for the insertion of a reed or bone spear. Most of the unfinished pipes show that the pipes were shaped first and the bowl and stem holes drilled afterwards. The striae of the rotatory drill can often be plainly seen. An odd specimen now and then show the bowl to be first excavated, leaving the outside to be polished off at the owner's leisure. The Indian being very independent, with a strong dash of individuality, formed his pipe to suit himself, but as certain forms occur again and again, we are justified in classifying them into types for convenience sake. The Indian had plenty of time to fashion his implements and orna-

ments, or in other words the tangible result of his needs, especially during the long winter months, and consequently we get a number of highly finished relics, whilst others, especially unfinished ones show that some interruption occurred which prevented their being completed. These highly finished objects "*de luxe*" were perhaps manufactured to pass the time away, and not for art alone.

Of all the various forms of pipes, both clay and stone that occur throughout Ontario, some show remarkable skill and workmanship in copying nature, it is remarkable that no fish forms occur, though the turtle, snake and frog occur occasionally. How is this? Were the fish considered beneath notice, as the Zulus think? Or, were they specially exempted from superstitious motives, as being bad "medicine." It is noticeable that fish are not mentioned in aboriginal legends—barring west coast tribes—and this is peculiar too, as many tribes depend to a large extent on fish for subsistence, and the monster sturgeon or large, fierce muskinonge were quite fit to be deified or spiritified. May not the monsters or "Wendigoo" who inhabited rapids, falls or the vicinity of large rocks in the stream, have been huge fish, and to whom the Indian offered his peace gifts of tobacco, etc., in order to propitiate for the welfare of the voyage.

Native copper relics are few and far between, only four specimens recorded to date, from this vicinity, namely, a small arrowhead,  $2\frac{1}{2}$  inches long, rounded point, and socket for shaft; two copper knives, one  $8\frac{1}{2}$  inches total length, blade double edged and tapering to a point, 5 inches long, true for insertion in haft  $3\frac{1}{2}$  inches long. The other knife has a curved blade, rounded point, and true, it is much smaller. The fourth implement is a spatula, present length 5 inches. The spatula part being  $2\frac{1}{4}$  inches long by  $1\frac{1}{4}$  wide and beaten very thin, the handle is rounded, diameter being a  $\frac{1}{4}$  inch. All these were found in the near vicinity of the Huron trail and may be considered intrusive. Some copper spear heads, gouges, beads, amulets are recorded from points south and east.

## THE FORMATION OF CORAL REEFS.

## NOTES ON POLYNESIA.

BY JOHN FRASER.

The coral islands of Polynesia, are now much in the mind and eye of scientists, for the rival theories of Darwin and Murry, as to the mode of reef formation, are to be tested there. Funafuti is the chief islet cluster of the Ellice group, and is about half way between Fiji and the Equator. Two hundred and fifty miles to the southwest is the small island of Rotuma, the nearest land in that direction. The whole group is an archipelago four hundred miles long, and from its northern extremity to the Gilbert islands, otherwise called the Kingsmill or Line islands, is a distance of a hundred and fifty miles. Funafuti is an *atoll* of thirty islets surrounding a lagoon twelve miles long. The islanders of the group subsist on fish and cocoanuts; but some of them, as the Funafutians, cultivate the aroids. Although from their broad faces, bulky forms and often curly hair, we trace a Micronesian element in them, yet the people of the group themselves say that their ancestors came there from Samoa thirty generations ago. Their language is Samoan; so is the island name, Funa-futi, for *Funa* is a word for "woman," and *futi* is the "banana." The Kingsmill islanders to the north of them are a stalwart, wild and savage race, of different origin, but the Ellice natives are mild and tractable. Thus, the two scientific parties that have recently visited Funifuti found themselves in safe quarters, and were able to continue their investigations in peace. One of the parties was sent by the Australian Museum, Sydney. Some of the results of its labors have been already recorded in the columns of the AMERICAN ANTIQUARIAN. The other party left England under the care of Prof. Sollas, in May last year, at the bidding of the Royal Society of London, to study the formation of coral reefs on the spot, the British protectorate of the group giving special facilities for that purpose.

Darwin's theory accounts for these by supposing the gradual submergence of the islands to which they are attached. To understand the theory, let us take a conical volcanic island in the Pacific, one hundred feet high. The madrepores begin to work on the flanks of the cone below sea level; soon their work appears just above the surface and forms a *fringing reef* close to the land; the cone sinks, the work continues to rise, and is then a *barrier reef*, either continuous or of detached coral islets around

the island and at a little distance from the shore; the cone now sinks more than one hundred feet, and its top is below the water; the reef becomes a circular band of coral of some breadth, having a lagoon enclosed within it; the coral band gets covered with sand, some stunted trees grow on it, and the whole is an *atoll*; then finally the madrepores work up from the bottom of the lake, which fills the space within the band, and the whole is now a *coral island*.

This theory, which had the support of Dana and others, has been keenly combatted from Darwin's time till now. Against *subsidence* is the fact that many of the Pacific islands are in areas of volcanic *elevation*; even Funafuti shows a rise of at least four feet; but on the other hand it lies on a cone, not on a bank, and has precipitous submarine cliffs all around it. Soundings taken at some of the other islands of the group also show that they rise from the floor of the ocean as a "range of deep sea cones."

To try to settle the question in dispute by experiments, these expeditions have gone to Funafuti. For it is manifest that as the reef-forming creatures cannot work except at a warm temperature and an inconsiderable depth of ocean, say not more than sixty fathoms, any coral wall found below that depth must have got there by the sinking of the rocks on which it rests. The Royal Society's expedition proceeded to test the depth of the coral formations at Funafuti by means of the diamond drill. The zoologist of the party, who is now in Sydney, states that the lowest depth they reached by boring was 105 feet; then the drill came on a bed of sand, which filled up the bore and prevented further investigation. He, however, thinks that the results obtained are unfavorable to the Darwinian theory. Mr. Gardiner has also studied the ethnology of the Ellice islands, and has spent some months at Rotuma and the Fiji islands, with the same object. A narrative of the labors of the expedition will soon be published in book form.

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## EGYPTOLOGICAL NOTES.

BY WILLIAM C. WINSLOW, LL. D.

The return of Prof. Petrie to the service of the Egypt Exploration Fund, by which all English archæological work in Egypt is to be under his leadership, is a matter of mutual congratulation. His "Research Account" will go on, chiefly in training students, who, however, do a deal of valuable work. Mr. Quibell, his lieutenant, has been engaged at El-Kab, some fifty miles north of Thebes, noted for its grottoes whose mural paintings abound in scenes of how the ancient Egyptians hunted, fished, banqueted, tilled the soil and buried their dead. Prof. Sayce



announces the discovery he has made of the cella of the temple at El-Kab. The wine jars in some cases were still covered by their original seals, and when he had opened them he found the wine of 4,000 years ago congealed into a solid mass. El-Kab in the morning of Egyptian history was the great center of Upper Egypt. Here, I will say, Mr. J. J. Tylor is doing an invaluable work, that of collecting and publishing in a series of royal volumes the scenes and texts from the tombs and temples. There are to be seven independent volumes (20 x 25 inches), of which two have appeared, the tomb of Paheri and that of Sebeknekhet. The plates are most beautiful and artistic, reproducing the exact freshness of color so wonderfully well preserved. The Egypt Exploration Fund office, 59 Temple street, Boston, may be addressed for information as to these rare editions of but 150 copies each.

At the above office is its presiding genius, our new Secretary, Mrs. Marie N. Buckman, to whom all inquiries as to the Fund books and subscriptions should be sent. Mr. Francis C. Foster is the new Honorary Treasurer for the United States. Any five-dollar check sent to him means that the new elaborate royal volume, also the illustrated Archæological Report *brochure*, and the Annual Report, will be received by the subscriber.

The Archæological Report for 1896 contains a reproduction of how an obelisk was transported down the Nile. Dr. Naville, in describing the concluding stages of his excavation of the temple at Deir-el Bahari, gives a touch of novelty by explaining the method of transporting obelisks, as shown on a bas-relief in the temple. It appears that two obelisks were carried in one big barge or raft, 120 cubits long, which was towed by a flotilla of thirty boats, with a total crew of more than a thousand men. Mr. D. G. Hogarth and Mr. B. P. Grenfell describe, with a brevity that is almost tantalizing, their search for Greek papyri in the Faiyum, which was so successful that one of them will go there again this winter. We observe that their identification of the sites of Karanis and Bacchias is duly recorded in the map at the end of the volume.

Mr. Griffith edits the *brochure*, and he summarises what has been done, not by the Fund alone, in excavations, and explorations, the publication of texts (hieroglyphic, hieratic, and demotic), history, geography, foreign relations, philology, religion, mythology, literature, science, manners and customs, ancient and Arab art. Mr. Kenyon, of the British Museum, deals in the same way with Graeco-Roman Egypt, which has grown so much in importance with the recent discovery of papyri.

Coptic studies are treated by Mr. Crum, under the headings of biblical and apocryphal, patristic, gnostic and magical, and miscellaneous. But, of course, the most interesting, if not the most valuable, part of the volume consists of the reports, by those

employed by the Fund, of the results of their work during last season, in advance of more formal publication.

Five of the oldest small boats known to exist in the world have been discovered in the sands which stretch desolately from the Dashûr pyramids. The boats, built of cedar and thirty feet long, were found buried at a considerable depth near the famous large pyramid, in orderly form and with mathematical relationship to the great pile of stone. From their design and decoration they must have been in distinguished use 4,500 years ago, such as transporting spices, perfumes and offerings to the resting place of the royal dead of the eleventh dynasty. Having performed these sacred duties for allotted times and persons, it is supposed, they were then placed to remain forever near the ageduring mausoleums of the dynasties they served in life and death.

Papias, the Bishop of the Phrygian Hierapolis, in the first half of the second century, wrote upon the "Logia" of the Gospels.

He heard St. John and was a companion of Polycarp, that book of MS would be a treasure indeed. Word has been sent to this country within the month of the discovery of this "Logia" among the treasures of Petrie's papyri. If his works have really come to light in a genuine form, they must add some important elements to our knowledge of the history of the New Testament writings.

BOSTON, May 10, 1897.

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## CORRESPONDENCE.

### THE TERTIARY MAN.

TO THE EDITOR OF THE AMERICAN ANTIQUARIAN:

SIR—In the ANTIQUARIAN for January, 1895, (Vol. XVII, 54.) I gave some account of certain chipped flints discovered by Dr. Fritz Noetling in the Upper Miocene (?) of Irmah, India, and expressed my own opinion as to the artificial character of one, at least, of these flakes, which opinion was corroborated by that of Professor Rupert Jones. Noetling claimed that the strata of ferruginous conglomerate, in which he found them imbedded, belonged either to the Upper Miocene, or to the Pliocene. Subsequently, I stated in the ANTIQUARIAN, for January, 1896, (Vol. XVIII, 29,) that Mr. R. D. Oldham had questioned in *Natural Science*, for September, 1895, (Vol. VII, p. 201,) whether these flints had been actually found *in situ*, and I gave a

summary of his account of the conditions under which they had actually occurred, concluding with his statement that "under these circumstances it cannot be said that the Tertiary Age of the flakes has been proved."

In *Natural Science*, for April, 1897, Vol. X, pp. 233-241,) Dr. Noetling has replied to this criticism of Mr. Oldham, and has shown most conclusively that he has stated the facts incorrectly. He does not blame him, however, for conveying a wrong idea of the locality, as "his visit of a quarter of an hour can hardly have impressed the situation distinctly on his mind." Dr. Noetling gives a diagrammatic section across the ravine where the chipped flints were found, showing very clearly the relative position of the strata of ferruginous conglomerate. This is said to be "neither very hard nor very soft. \* \* \* It consisted chiefly of a mass of irregularly shaped nodules of earthy hydroxide of iron loosely cemented together. As the exposure seemed a good one to search for fossils, I climbed down, and the first thing I found was the molar of a *Hippotherium antelopinum*, still imbedded in such a way that only the grinding surface and part of the side were visible. I distinctly remember that I had some difficulty in digging it out with a knife, because I was afraid of using the hammer for fear of damaging it. While thus engaged I noticed some quaint looking flint flakes close to the molar, and I also distinctly remember that I wondered at them, because of the absence of other quartz pebbles. Quite close to the molar was the largest of the flakes, *imbedded in such a way that about two thirds of its length was still in the conglomerate, one of the ends sticking out*. On looking further about I found some more, but I cannot, of course now remember the way in which each single specimen was imbedded. Such is the history of the find."

Dr. Noetling repeats the figure of the flake, as previously published by him; and I can only repeat my former statement that I cannot doubt its artificial origin. He has, however, revised his former estimate of the geological age of the beds of conglomerate. "Originally," he says, "I believed this bed to be Miocene. Subsequent examinations, however, have proved that Dr. Blanford's doubts as to the age were well founded, and that it must be considered as Pliocene."

In an appendix to Professor G. F. Wright's *Man and the Glacial Period*, (International Scientific Series,) D. Appleton & Co., 1892, entitled *The Tertiary Man*, I reviewed all the evidence thus far produced upon the vexed question of his existence, and concluded that "we must wait for further and better authenticated discoveries." Since then I have

seen no evidence that appears nearly so convincing as this of the reality of *The Tertiary Man*.

In *Natural Science*, for February, 1897, (Vol. X, p. 89,) Mr. W. J. Lewis Abbott describes and figures four "*Worked Flints from the Cromer Forest Bed*." This well known series of beds, lying along the north coast of Norfolk, England, belongs to the Upper Pliocene, and has furnished at least twenty species of terrestrial mammals, half of which are extinct and the rest still survive in Europe. Of one of these flints Mr. Abbott says, "Recently working in the *Elephant Bed* for bones I was delighted, after breaking away some eighteen inches of the iron pan to see sticking out what appeared to be an unmistakable worked flint. I called my wife to see it *in situ*, before it was removed." A second specimen was found in the bed, but the two others, although in all probability derived from it, were not found imbedded in the matrix.

Of some of these specimens Sir John Evans remarks that "they may or they may not be artificial." To me they certainly appear to be such.

HENRY W. HAYNES.

BOSTON, MAY 8, 1897.

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### THE SERPENT EFFIGY IN MINNESOTA.

DEAR SIR—The Dakotas frequently, I think generally, constructed small earth effigies of animals at their Wahaw feasts; but I should suppose, from my recollection, that these effigies were only about the size of the larger species of animals represented. I have in childhood seen several of these small effigy mounds constructed. They also constructed serpent effigies of boulders of very much larger size. I never saw one of these constructed, but my impression is that several were constructed since we went there in 1835. I have seen a great many, most of them partially destroyed. All that I can remember seeing were on smooth upper bottom or brush lands, near the Mississippi and Minnesota and their tributaries, covered with a good sod, but usually near to some slope or ravine where boulders were abundant. I never measured or stepped one, and do not remember hearing any estimate of their length, but my impression is that those I saw ranged from 50 to 100 feet in length, counting all the way around the curves. I do not recollect any circumstances indicating that they were worshipped after this feast in which they were constructed. They were very easily destroyed, most of the stones being of such size that a boy

of twelve could handle them, and the Roman Catholic half-breed boys took delight in destroying them through their hatred to the serpent as the symbol of Satan. Such as were not destroyed by these half-breed boys have since been destroyed in bringing the land under cultivation. I remember quite distinctly that in no two were the shape of the snake exactly alike. They represented all possible natural positions of snakes. The Dakota tradition was that they constructed them much more frequently generations before, and they were constructed by the Iowas, who previously occupied the territory.

The serpent was the incarnation of evil, worshipped through fear, not reverence, according to those I heard speak of it, and as I have heard several express it, it had lost its power since the white man's God came into the country. The heathen Dakotas believed in a way in the white man's God, but were by no means ready to admit his superiority to their principal gods, such as Inyan, the stone, their war god, etc. They did not regard him as hostile to their leading gods, but regarded him as surpassing them in hatred to the serpent, the common enemy of all real gods. Some of the heathen were ready to admit that the white man's God was stronger than any one of their gods, but only the battle of Wood Lake led them to fear he was stronger than all their gods. The heathen believed that the white man's God protected the Roman Catholic children in destroying the serpent effigies, and viewed the destruction complacently, but having doubts whether their own gods would protect their own boys, would not permit them to participate.

According to the Dakota traditions current fifty years ago, the large mounds in Southern Minnesota were constructed by the Iowas. I have heard in childhood several traditions of the terrible results to war parties who disregarded the terrible power exercised in former generations by the great animal effigies constructed by the Winnebagoes. My father obtained traditions as to the time and place of construction of a number of large animal effigies, and the feats of the animal gods in defending them in by-gone generations. He took down and preserved a number of these traditions, but all were destroyed in 1862. He did not, however, regard them as of much value, beyond establishing the fact that most of the great animal effigies in Wisconsin were built for religious and defensive purposes. He also learned from those who had lived among the Iowas, Otoes, Pinkas, Kansas, and Osages, that all of those tribes had traditions that they had formerly constructed large mounds. He also learned directly from

the Winnebagoes, and indirectly from several of the other tribes, that they were formerly much farther east, and much more numerous, but being almost exterminated by a combination of hostile tribes, the remnant were compelled to abandon their fortifications and flee.

The Dakotas proper had no traditions that they constructed any large earthworks. Their traditions were that exceedingly long ago they came from the Atlantic, (by short stages,) remaining on the north side of the great lakes till they reached Mackinac, where they divided, some, the Santaas, taking the south shore, while others, the Yanktons and Teton, kept on the north side. Several of the Winnebagoes asserted that, in the region where they lived before they came to Wisconsin, they depended chiefly on agriculture. They were not agreed as to the time the Winnebagoes had lived in Wisconsin, but all agreed that it was at least ten generations. They stated that when they came to Wisconsin the Dakotas held and worked the mines of native copper on the south shore of Lake Superior. The Dakota traditions are very positive that they formerly worked these mines, holding them as the property of the entire Dakota nation, as they afterwards held the pipe-stone quarries of Minnesota. That the Dakotas held and worked these mines for some time, perhaps for several centuries, I have no doubt. I suppose, also, that the Ojibway traditions that they subsequently worked them, are also correct. I have no doubt, however, that they were worked long before the Dakotas reached that section, and whether the greatest activity was under the Dakotas or under their predecessors, I have no idea. I am sure, however, that the Dakotas, among whom I spent my childhood, had ample skill and energy to do any copper mining of which we have any evidence, and to give the copper any shape in which it has. I am also inclined to think that, with a sufficient motive, they could have shaped and built any single earthwork, or system of earthworks, found in Ohio. I do not, however, suppose that the Dakotas proper ever did construct any large mound. I do not, however, feel confident that father was entirely correct in his idea that the tribes related to the Dakotas in language were very prominent mound-builders. I am, however, inclined to think that there was more than one race of mound-builders in the Ohio Valley.

Father thought that it has probably been at least 3000 years since the separation of the Dakotas proper from the allied tribes. Their traditions as to holding and mining the copper were numerous. They claim that they obtained possession by fighting most valiantly. They say they gave

them up because the introduction of civilized supplies made the compensation for working them inadequate. The Dakotas are not, however, given to treasuring up traditions of defeat, and quite likely were driven out of them only after a long and bloody struggle, as claimed by the Ojibwas.

Yours truly,

ROCK ISLAND, ILL., March 27, 1897.

A. W. WILLIAMSON.

### THE SERPENT AND EGG.

The archæological museum of the Canadian Institute has lately been enriched by the addition of a valuable and historical curio from Scotland, known as "*The Plighting Stane o' Lairg*." Where it originally came from is not known, but it has existed in Sutherlandshire as long as Scottish tradition has any record. The stone is disc shaped, being worn out in the center, and through the hole, probably caused by the action of water, persons wishing to make an agreement, relating to love or business, solemnly shook hands, promising sacredly to carry out the contract. Marriages were celebrated in this way when witnesses were present, and in all known cases the pledges made were kept. This relic of Druidical times was built into a small wall extending from the church at Lairg. But seven or eight years ago the buildings were torn down to make room for a modern edifice, and the stone fell into private hands. Mr. Hugh Nichol, of Stratford, was in Scotland a short time ago, and managed to secure it. David Boyle, the indefatigable curator of the Ontario Archæological Museum, Toronto, says, "What is probably the oldest European stone relic in America, not excepting even Cleopatra's Needle in Central Park, is the 'Plighting Stane o' Lairg,' now in the Archæological Museum, in Toronto. This ancient memorial of the faith and superstition of our ancestors is supposed to date as far back as the days of the Druids in Great Britain. For centuries it was connected with the life history of the people in the north of Scotland, where it was regarded as a silent witness to the vows and pledges of young and old in matters of love and commerce.

Scottish marriage ceremonies have always been characterized by simplicity, and those brought about through the Plighting Stane o' Lairg are regarded as peculiarly sacred. Here the lovers met in the first instance merely to promise each other faithfulness, and on a subsequent occasion to renew their vows, and accept each other for better or worse. Dis-

ternal or even death, was supposed to follow the n of such a pledge, and so universal was the belief in ues of an oath or affirmation made through this stone as resorted to by all and in the making of every kind in.

of land, exchanges of cattle, purchases of all sorts, eements to perform military or domestic service were in the presence of a witness at the "plighting stane."

the practice cease when better light dawned on the

Even the Reformation did not eradicate a belief in ies, and up to a very recent date, it was the custom eople to travel for many miles in order to avail them- of the peculiar sacredness that attached itself to s sanctified by this medium.

on record traditionally that numerous attempts have ade by ecclesiastical authorities to do away with the



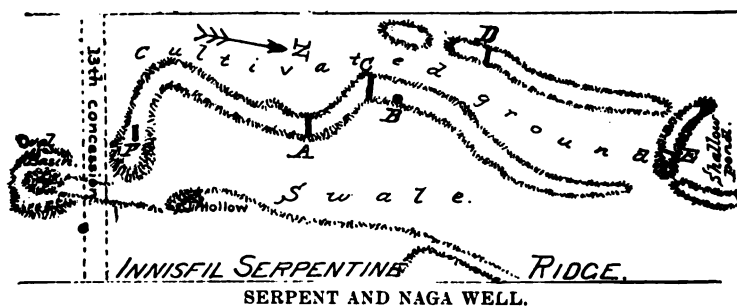
SERPENT AND EGG.

ious belief, but in vain. Kirk sessions protested, but ple believed. The schoolmaster, however, appeared h in the stone began to wane. Still it was not until ent relic was removed from its old place in an offshoot e of the church walls that its glory departed. It was ed to the Ontario Museum through Hugh Nichol, of d, by Miss Mary Buchanan, of Lairg, and it may the donor to know that even in the new world, and light of almost twentieth century knowledge, some ate couples still stand on opposite sides of the stone reptitiously grasp hands."

important discovery of an egg and serpent mound in e Lake District was made late last summer by Mr. oyle. He has named this find the Otonabee mound. e Lake District is one of the most interesting in ogical remains in Ontario. The Otonabee mound is on the shore of Rice Lake at Roach's Point, in e Township, near the mouth of the Indian River, and mile and a half south of the village of Keene. The this point is a high bluff, and the mound lies in such



a position that it was natural to regard it as built for military purposes, but upon closer investigation, strengthened by actual measurements, it was found to be a serpent and egg mound, much resembling the one situated in Adams County, Ohio. The Otonabee mound is one hundred and ninety feet from head to tail, having four regular convolutions, each forty feet long. The general height of the mound is between four and five feet and it is about twenty-five feet at the base. The egg mound lies in front of the head of the serpent and distant twenty-five feet, having a diameter of forty by thirty-six feet. The serpent mound has long been known as an earthwork, and was locally regarded as the survival of an old fort, erected in a by-gone age for military purposes. Mr. Boyle concluded



from the shape of the mound and its relation to the surroundings and the character of the earth composing it, that it was not a fortification, but a sacred earthwork. The mottled character of the soil gave evidence of the mound having been constructed by different workers bringing small quantities of earth from different points, and the presence of shells from the shore of the lake, seventy-five feet below the slope at whose crest the mound is built, showed that it was an artificial structure. In the egg mound were found four skeletons, two in the lower strata, assumed to be the remains of prehistoric persons, and two in an upper stratum, regarded as "intrusive" and comparatively modern. In the serpent mound were discovered other skeletons, similarly situated relatively as to the layer, and affording evidence of double use for interment purposes.

JOHN MACLEAN.

NEEPAWA, MAN., CANADA.

## ARCHÆOLOGIC AND BIBLIOGRAPHIC NOTES.

BY ALBERT S. GATSCHET, WASHINGTON, D. C.

*The Vatican Manuscript No. 3773* is a pictorial codex executed in the *Nahua* (not Maya) style, and became first known through its reproduction in Lord Kingsborough's volumes. It was owned by the Vatican library as early as 1596, and Father Athanasius Kircher has in the seventeenth century mentioned it in a quotation. The Jesuit Fr. Lino Fábrega, in his "Esposizione del Codice Borgia," gives an account of six manuscripts of Nahua origin, and describes the "Vaticano" as a *ritual* manuscript, "consisting of nine pieces of tanned deerskin, forming a length of  $31\frac{1}{2}$  palms. It has forty-eight leaves partly painted, and, together with the last, which should be No. 49, are attached to a wooden cover, in such a way as that by folding it like a screen, or fan, there appears an *amoxtonli* or small book, eight inches high, seven wide and three inches thick, which contains a ritual calendar." Mr. Aglio, the artist employed by Lord Kingsborough in copying the work for publication, was misled by one of the covers into beginning the copy at the end and to finish it at the commencement, because one of the wooden covers has attached to it two pieces of European writing. The codex is inserted at the end of the third volume of Kingsborough's "Antiquities of Mexico," London, 1831-48; (nine vols., grand folio). To remedy this defect, H. E. the Duke de Loubat, obtained permission from Pope Leo XIII to reproduce the valuable relic in a new fac-simile edition. It was done by means of photo-chromography by Danesi, publishers, in Rome, Italy, 1896, and for its absolute correctness of design and strictly faithful reproduction of the original, deserves the full applause of the antiquarians. Only fifty copies have been printed of it, accompanied by three descriptions of the codex, one in Spanish, one in Italian and one in English. The Duke is well known as a generous promoter of Americanistic studies.

Prize-questions proposed by Duke de Loubat's scientific commission, on subjects pertaining to the history, antiquities and languages of America, when solved by men of science, are submitted to the French "Institute" and handsome prizes apportioned to the best treatises sent in before the time appointed.

*Frank H. Cushing*, as vice-president of Section H (Anthropology) of the Amer. Assoc. for the Advancement of Science, delivered at the Springfield meeting, August 1896, an address on The Arrow,

its manufacture, qualities and use, which has appeared also as a separate and holds forty-one pages octavo (pp. 169-240, Salem Mass., 1896.) The numerous illustrations give specimens from all nations and tribes, apt to throw any light on the subject also on the use of the lance, spear, throwing stick and other missiles, and on the multiform tools used in manufacturing them. Cushing gives a highly interesting sketch of his earliest attempt to imitate the Indian arrow-point from glass, flint and other material, when a school-boy in Western New York, and how he gradually became an expert in arrow-making and working stone by mere experiment, for there was nobody at hand who could teach him. This art can be acquired by long experimental study only; the technical terms designating the objects made, the tools and mode of chipping already form a good sized vocabulary. The author believes that the arrow had been perfected in all its parts and had become the chief weapon long ere the simplest bow had been conceived of or fashioned.

*D. G. Brinton's "Myths."*—The contents of the third revised edition of Dr. Brinton's "Myths of the New World"<sup>1</sup> are evidencing considerable progress in our knowledge of the subject. There are portions in this work that have not been rewritten since the first edition of 1868, but the larger part of the third edition rests on researches made by recent travelers who have studied the myths of North and South America on the spot, sitting down in the midst of the dusky natives and listening to their weird and grotesque spirit tales. Some of these travelers, gifted with an innate ability for linguistic studies, have taken down the more important myths in the *native* language, and thus have furnished much more reliable material than by following the method commonly employed. Books containing genuine Indian texts attract but little attention in our age, which is overstocked with all sorts of literary products, but in a century or two from now will be appreciated fully as to their real worth and merits.

That the genuine Indian deities possess neither moral nor immoral qualities, becomes evident from their myths and mythic tales, and also from every chapter of Brinton's "Myths." These deities are simply the expression of natural powers and of the elements, engaged in continual strife among each other, remorseless and unflinching in their character. Many of them are hostile to man, and hence he seeks to propitiate them by surrendering to them his most highly prized property. The majority retain their spirit nature and are not fully anthropomorphized, nor distinctly limited to one sphere of activity. The Indian conception of the deity is not as with us, systematic and theologically logical, but vague and indistinct, floating to and fro as the fog

<sup>1</sup> Daniel G. Brinton, *The Myths of the New World. A treatise on the symbolism and mythology of the Red Race of America.* Third edition revised. Philadelphia: David McKay, 1896. Octavo, pp. 361.

in the autumnal sky. To the white man it is much more difficult to grasp the real import and meaning of Indian deities and myths than those of European and Asiatic mythologies.

Should an intelligent medicine-man of some Indian tribe commit himself to the task of writing down the mythology of his own nation and of the neighboring tribes (if familiar with some of them), he would, in his ignorance of the white man's terminology, furnish a description widely different from our products in that line, also more true and accurate than these. The conception of a *god* would not occur in his sketch, nor that of *faith* or *sin*. His ideas of supernatural beings would all move in the sphere of the miraculous, impossible and grotesque, while our theology is now using argument and abstract logic more than it does the miraculous and transcendental element. Symbols of all kinds are more in vogue among Indians than among us, and the various uses to which the number *four* has been put in the character of a symbol are described at length in Brinton's book. The fabric of their religions is largely based upon it, and details are given from a multitude of tribes and nations, together with the varieties of the symbol as a cross, tree of life, etc. The number *four* was and is still all important as a magic, mystic or sacred number in the east of North America; but the author forgets to state that in California, Oregon and Washington *five* takes its place, and is there just as highly regarded and revered as *four* is further east.

F. Webb Hodge, the librarian of the Bureau of American Ethnology, has composed a list of all the *Pueblo Indian Clans* of New Mexico and Arizona, of which we have any knowledge. These clans are totemic gentes either accessible through historic tradition or found to exist at the present time. The researches of Adolph F. Bandelier on the Rio Grande pueblos have been especially fruitful for augmenting the list. The pueblos explored belong to four different linguistic stocks, the Tañóan, Keresan, Zuñian and Shoshonean. Zuñi has now thirteen clans, the Keres villages ninety-three, the Tewa settlements about one hundred. Seldom has any article been published that is so useful for quick reference to the student of Indian history, folklore and statistics than this comprehensive list. It has appeared in the "American Anthropologist" for 1896, and extends from page 345 to 352, including a tabulated plate of all the totems mentioned.

A catalogue of a similar arrangement, though different in purpose, has been compiled by Walter Hough, archæologist of the Smithsonian Institution. During his stay in the Moki villages he collected a long list of native names for indigenous plants, trees, bushes, shrubs, which he published in "American Anthropologist," February, 1897, under the title, "The Hopi in Relation to their plant environment" (pp. 33-44).

*Taraskan Language of Michoacan.*—Judge Raoul de la Grasse, of Rennes in France, and Nicolas León, of Mexico, have jointly published in French a grammar, dictionary and selected texts of the Taraskan language, spoken by a large number of Indians around Lake Pazcuaro, in Michoacán, a Mexican State lying west and northwest of the City of Mexico. This language had been anciently recorded by Spanish authors, whose works were previously published by Dr. Nicolas León, who has for a number of years conducted the publication of the "*Memorias Michoacanas*" and of the "*Museo Oaxaquense*." The syllables of Tarasko mostly end in vowels, and the language may be called sonorous, even euphonic. A curious feature is the incorporation of radical syllables of concrete and abstract signification into words, e. g., *hoponi*, to wash; *hopotani*, to wash one's head; *hopotsini*, to wash one's head; *hoposhuni*, to wash one's abdomen; *hopomuni*, to wash one's mouth. The joint work of the two linguists forms the nineteenth volume of J. Maisonneuve's "*American Linguistic Library*," a series which already comprehends a large number of excellent books on Central and South American languages.

This well known firm of J. Maisonneuve in Paris, 6 Rue Mézières and 26 Rue Madame, is also the publisher of "*Revue de Linguistique et de Philologie Comparée*," four numbers annually, which has just entered upon its thirtieth year and contains many articles on American linguistic and ethnographic researches. As one of the last contributions of this descriptive series may mention "*Les Galibis*," by Aristide Marre (1896).

*Guido Boggiani*, traveler and artist, is the author of an instructive sketch on the Chamacoco tribe, which inhabits a portion of the Gran Chaco, a plain of enormous proportions extending on both sides of the Paraguay river, though more to its western than on its eastern bank. The Toba Indians are the most populous nation in the Gran Chaco, but many other tribes there are conspicuous also, like the Caduveis, Caingúas, Guaitanas, Matacos, Lenguas, Angaités, most of them belonging to the Guaicurú family. Photographies of the Chamacoco hunting, and domestic implements are profusely scattered over Boggiani's paper, which was compiled in the Italian language, and reprinted in the "*Atti della Società Romana di Antropologia*" vol. I, number, Rome, 1894, (octavo) and fills about 120 pages, including the vocabulary. The author states that the language of the tribe has nothing in common with the dialects of Guaicurú, nor with the language of any other tribe spoken of in the tracts.

*Samuel A. Lafone Quevedo*, the explorer of South American antiquities, is the author of a linguistic study written in Spanish and entitled "*Estudio de filología Chaco-Argentina*," which deals with the Vilela or Chulupi language of Argentina, and is b

upon the dates found in the works of Hervás, Adelung and Pelleschi. It was published 1895, Buenos Aires, in the "Boletín del Instituto Geográfico Argentino," vol. XVI, Nos. 1, 2, 3, 4. The vocabulary appended gives about 300 terms of the language. Only Pelleschi is a recent explorer of the tribe and its language, whereas Hervás and Adelung lived a century ago, copying from the reports of missionaries. Quevedo considers the Vilelas and the group of Indians to which they belong as a medley of an Andine race with Matacos, Tobas and Chiriguano, all of these being of Guaicurú affinity and inhabiting the Gran Chaco on Paraguay river. Appended is a series of philological remarks to Pelleschi's vocabulary, pp. 49-74.

In Vols. XVI and XVII of the same scientific series of the "Geographic Institute of Argentina," our assiduous author has published three more treatises of importance, all referring to the Mataco-Mataguayo group of the Gran Chaco languages. One refers to the Nocten dialect, and utilizes the writings of Innocenzo Massei (Lord's Prayer, etc.); another, about the Vejoz dialect, is based on a vocabulary and remarks by the French explorer, d'Orbigny; a third one concerning the Matacos and their language, from the field-notes of Joaquín Remedi.

A separate treatise is of a linguistic and historical import; it is based on personal investigations of Mr. Lafone himself, and deals exclusively with the Mbaya Indians, also known as Guai-curú proper: "Idioma Mbaya, llamado Guaycururú," etc., Buenos Aires, 1896, and including the grammar and vocabulary of the language, contains 62 pages, 8 vo. Specialists in South American languages are well acquainted with the fact that Mr. Lafone has published previously the most complete linguistic manual of the Mbocobí language in existence. This language also belongs to the Guaicurú family.

Juan B. Ambrosetti, has, during the past years, largely contributed towards an increase of our ethnographic knowledge of Argentina and the neighboring portions of South America. He writes in Spanish and his contributions to science are published in various periodicals. The "Customs and Superstitions in the Calchaquí valley, province of Salta, (northwestern parts of Argentina)" is an illustrated pamphlet of 47 pages, octavo, which appeared in the "Anales de la Sociedad Científica Argentina," vol. 41, Buenos Aires, 1896," and contains many of the religious beliefs, popular customs, ceremonies and songs of the people, whose portraits show them to be a vigorous and able-bodied indigenous race. The "Caingá Indians of the Upper Paraná, province Misiones" is a tribe of over 1000 population in the northwestern part of Argentina, ethnographically sketched by the same author in an article published in the "Boletín del Instituto Geográfico," vol. XV, pp. 661-747, which is profusely illustrated. This tribe belongs to the pure Guaraní Indians

and should not be confounded with the Indios Kainganges, who live at San Pedro, in the Argentinian province of Misiones. For the description of these, Ambrosetti has written another extensive ethnographic and linguistic article, printed 1895 in the "Revista del Jardin Zoologico," vol. I, No. 10, in Buenos Aires, (pp. 83, octavo). These Indians extend also into Brazil, where they occupy portions of the States of Paraná and Rio Grande del Sur. The white people class them as Tupis, though they want to be called by no other name than that of Kainganges. Brazilians also call them Coroados from the special manner in which they cut their hair. Their language approximates considerably to the Botocudo, as far as phonetics are concerned.

Two other pamphlets composed by the same scientist refer to the Guarani race also, but are purely ethnographical: *On the Pre-historic Burial Grounds on the upper Parana* (Misiones Province), 1895, pp. 39, octavo, printed in the "Boletin del Instituto Geografico Argentino," of Buenos Aires, Vol. 16, Nos. 5, 6, 7, 8, and *The Pictured Caves* (las grutas pintadas); the pictographs of the Salta Province; pp. 34; illustrated and published in the same periodical and same volume (16th).

### THE SUASTIKA NOT FOUND IN POLYNESIA.

THE MANSE, WEST MARTLAND, N. S. WALES.

REV. S. D. PEEF:

JUNE 4, 1897-

MY DEAR SIR—There is something fresh here in the way of testing the theories of coral formation, so I enclose for your columns the latest news.

I got your letter a few months ago, with suggestion as to topics. I have it not beside me at present, but I remember some of the inquiries. In reply, I beg to say:

- (1) There is no trace whatever of the *Suastika* emblem anywhere in Australia, nor so far as I know, in Melanesia or Eastern Polynesia. In fact, in these regions, there are no religious beliefs of which any expression is made by emblems. The chief care of the black races here is to guard against the attacks of evil spirits, who bring disease and sickness and death, and all sorts of calamities; and though the wizards pretend to be able both to bring disease and to drive it away, yet they use no symbols of divine power, such as the *Suastika* or the *Trisula*. The brown Polynesians also are believers in *Mana*, or divine and supernatural power, but their wizards work merely by words and incantations—they use no symbols.
- (2) The almost universal belief here is that the Eastern Polynesians did *not* come into the islands of the Pacific by

ay of America. Their traditions everywhere say that they came from Havaiki, (Savaii and Hawaii,) as their ancestors did, but this they place in the N. W., away beyond the sunset. Scholars here find it impossible to locate Havaiki,

beyond the tradition there is nothing which one might use as a finger-post to show the way.

(3) *Coral Reefs*.—In a previous communication I told the disappointing results of the expedition sent by the Royal Society of London to the Ellice group, in order to examine the formation of coral reefs. The atoll of Funafuti that group, is favorably situated for that purpose, for it is on the southwest edge of what Darwin and Dana considered a vast area of subsidence in the Pacific. Soundings taken there recently by H. M. S. *Penguin* show that the base of the island is an almost vertical submarine range of cliffs, from 500 to 600 feet deep. Here, therefore, by adequate boring through the coral mass, it might be possible to realize Charles Darwin's earnest wish, "that borings should be made in some of the Pacific and Indian atolls and cores for slicing brought home from a depth of 500 to 600 feet."

The expedition that left London last year was under the charge of Professor Tollas of Dublin, and McGardiner of Cambridge, and was joined in Sydney by Mr. Hedley of the Australian Museum here. I have already given a short account of the work they did at Funafuti. Unfortunately it was found, after two bores had been sent down, the one to the depth of 105 feet and the other 70 feet, that the coral rock is of honeycomb structure, and has in it patches of sand, both of which faults baffled the boring tools and caused the work to be abandoned, much to the grief of all concerned in the investigations. This failure, however, is likely to be only temporary, for the local committee here, which last year co-operated with the Royal Society, has been so energetic that it has got a donation of £500 for a new expedition to Funafuti, and our local government has given the free use of a set of diamond drills, with all the necessary gear for the work. This boring plant is so extensive that it weighs twenty-five tons. The standpipe has an inside diameter of 6 inches; within it will be sunk casing pipes of different diameters, if necessary—5 in., 4 in.—and it is thought that a depth of 300 or 400 feet can easily be reached, but there is enough of piping to go down 1,000 feet. The cores will be carefully preserved, marked, recorded, and then stored in suitable boxes and forwarded to London.

The lagoon within the coral islets of Funafuti measures 12 miles by 14 miles, and its greatest depth is 30 fathoms. Near



its center is a sand bank about 2 feet above high water. On this bank a smaller and subsidiary bore is to be sunk, while the other bore will be on the principal islet. The leader of the whole expedition is T. W. E. David, Professor of Geology in the University of Sydney, and consists of eleven persons. With the exception of the loan of the boring appliances, the whole cost will be borne by private liberality. Miss Walker of Sydney has given £500; the Hon. Ralph Abercrombie of London, £100; the Royal Society of London, £100; and a coral committee, £100; a fine boat has been presented by two local gentlemen, and the London Missionary Society has promised to bring back the whole party to Sydney by its ship, the *John Williams* in September. Professor David left Sydney yesterday, June 2, en route to Funafuti. Let us hope that the results of this expedition will settle the controversy between the rival theories of Darwin and Murray.

SYDNEY, AUSTRALIA.

JOHN FRASER.

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## EDITORIAL.

### AMERICAN RESEARCH IN BIBLE LANDS.

The part which American archæologists have taken in the work of exploring the lands of the far East has been constantly increasing and has now assumed great prominence.

The history of these expeditions has not been written, though most American scholars are acquainted with it, and the names of the parties who have performed the work are already renowned. There are several centers from which these parties have gone forth, mainly cities on the Atlantic Coast—Boston, New York and Philadelphia being the places which have furnished the funds and in which the parties have been organized. The last mentioned city may be said to have taken the most interest, or at least has been able to accomplish the most important results, and seems likely to furnish the greatest amount of literature on the subject.

Various parties have been sent out by the Archæological Institute who have explored the classic lands and their reports are valuable. The Wolffe expedition, which was sent from New York under the leadership of Dr. Ward, accomplished great results in Babylonia.

The money which has been furnished by American citizens to the Egypt and Palestine Exploration Fund, whose central offices are in London, and American offices are in Boston and Cambridge, has been well expended; but the recent expedition to the remote region of Babylonia and Chaldæa, under the auspices of the University of Pennsylvania, has resulted in some most remarkable

the discoveries—discoveries in fact which seem almost to revolutionize the opinions of scholars and to carry back the dates of history into an amazing antiquity.

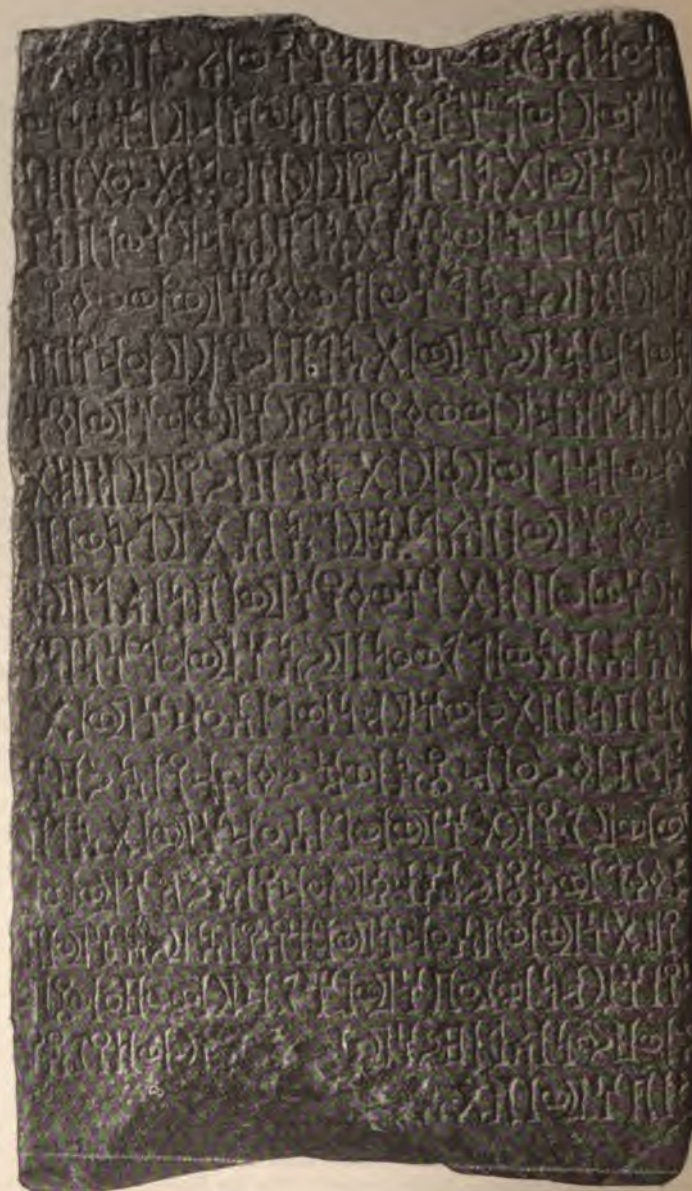
The effect of these discoveries will be felt by Bible students more than by any other class, for the very reason that they absolutely contradict and refute the theories which have been advanced about the modern character of the books of Moses. The telescope of archæology has been directed towards these ancient seats of civilization, and has brought before the eye a long vista of progress, showing that these early books of the Bible are true representations of ancient times. They are entirely out of place if they were written or edited at any late date.

The perspective requires that they should be ascribed not to a later, but to the earliest period of Jewish history, though that they prove to be quite late in the history of the world, inasmuch as Babylonian history antedates the Jewish, one or two thousand years.

It is fortunate under these circumstances that a museum of Biblical Archæology has been begun in connection with the University, and that as an initiative to it, the expedition has been so successful.

It was in 1888 that the Semitic section was created and steps were taken to gather those objects which would illustrate the life and customs of the various peoples of the Old Testament. The cordial relations which were established with the great Ottoman Museum and the University gave a fresh impulse to the growth of this Biblical Museum. No other nations of the ancient world stood in such a close contact with the Hebrews as the Babylonians and Assyrians, whose monuments have done so much to prove the accuracy of the Old Testament books. It was, therefore, natural that the Babylonian collection should form a nucleus of the museum, but as the Hittites and Phœnicians were also closely connected with the Hebrews, and the Sabeans and Mineans of Arabia were brought into notice, the five nations of the East were included, and collections or casts were gathered from Constantinople and Berlin to strengthen the Biblical Museum, and the work of publishing the reports was begun, of which the following is a list:

The second part of the Curator's *Old Babylonian Inscriptions*, Chiefly from Nippur (being Vol. I of Series A of the Babylonian Expedition of the University of Pennsylvania,) was published by the American Philosophical Society in the course of the last year. He also, in connection with a number of American and European scholars, published *Recent Researches in Bible Lands* (John D. Wattles & Co., Philadelphia,) to which he contributed the historical sketch of "Babylonian Excavations by American, French, and Ottoman Expeditions during the last years." For the *Holman S.S. Teachers' Bible* he wrote and illustrated the archæological section. Vol. IX, Series A of the Babylonian Expedition of the University of Pennsylvania (Tablets, found in the reign of Artaxerxes I, by H. V. Hilprecht and A. T. Clay,) published through the liberality of Mr. Eckley B. Coxe, Jr., is in press now, and will appear at the beginning of June. Vol. I, Part III, Vols. II, VI, X, and XI, of the same series A of the inscription work are in course of preparation.



South Arabian inscription from San'a.

Reprinted in *Recent Research in Bible Lands*, from *Corpus Inscriptionum Semiticarum*, Part IV.

J. H. Haynes' *Narrative of the Latest Excavations in Nippur*, as edited and supplemented by H. P. Hilprecht, will be published at the end of this year. The first part of Series B, Vol. II, *Babylonian Seal Impressions and Dated Documents*, by H. V. Hilprecht, will appear at the end of 1897, and *Assyrian and Hebrew Bowls*, by R. Gottheil and Morris Jastrow, Jr. (Series B, Vol. IV,) in course of preparation. Other volumes will follow as soon as time and material permit. Dr. John P. Peters' work, *Nippur: or, Explorations and Adventures in the Euphrates*, in two volumes, is also announced, the first being nearly ready.

The most fortunate movement, however, was that made by the publishers of the *S. S. Times* which resulted in the gathering of a series of papers, but popular, reports from the directors of different expeditions to the east, and publishing them in a book entitled "Recent Research in Bible Lands." The contributors to this volume are of them Americans, though some of them have been connected with British societies. The book begins with a general review of the work by Prof. J. F. McCurdy, who is followed by F. J. Bliss, son of the American missionary at Beirut, who has gained great renown as an explorer. He first describes the character of ancient mounds or tells in which lie buried the various cities which have flourished and gone to ruins, and next describes the particular tel which he explores himself, namely, that at Tel el-Amarna, or ancient Lachish.

He says: "The regular stratification of a 'tel' is of great importance, for it discloses the history of a city through all ages, and is like the leaves of a book, in which we may read the progress of the past and apply the lesson to other cities, and in fact to the entire country. The same stratification is found in other cities, such as Jericho, Megiddo, Jerusalem, Taanach, and Hissarlik." He was directed to this place by the fact that Dr. Flinders Petrie had in 1890 made a masterly reconnaissance in which, by the study of the strata alone, he was enabled to recognize the varieties found at different levels, and so establish the chronology of each city which had been erected and destroyed, the section of the mound having been furnished to his view by a remarkable excavator, namely, a stream, which had washed its sides and eaten its way to its foundation. Dr. Bliss began in 1891 and continued for two years. He took a third of the area and removed a horizontal layer, showing the ground plan of the dwellings of eight successive cities, each containing its own objects, flints, weapons, tools, scarabs, which furnished dates of occupation extending from the 17th to the 5th centuries B. C., a period which is the most interesting in the history of the Israelites. He found store-houses, ovens, wine presses, public halls, and private dwellings, and even fortifications, but no library. In the place of this, a precious tablet with a cuneiform inscription, which answered remarkably to the tablets discovered at Tel-el-Amarna. This throws great light on the history of this region when the Israelites were in Egypt.

The explorations in Babylonia by a party of American archaeologists has been productive of even better results. The names of the members of the party are as follows: Rev. Dr. Peters, of

New York; Prof. J. V. Heilprecht, of Philadelphia; Prof. J. H. Haynes, of Roberts College; Prof. R. F. Harper, University of Chicago.

They began their work in 1888, and have already carried on several campaigns, beginning at the city of Nippur, which is situated upon the edge of the great marshes of Babylonia, and is surmounted by the venerable mound of the collapsed temple of Bel. The result was satisfactory in every way.

More than 2,000 cuneiform documents were secured in the space of a few months. The following year the director, Dr. Peters, and the business manager, J. H. Haynes, renewed their work in Babylonia, but the Assyriologist remained to complete his studies of the relics and make out a plan of the architecture. Thousands of documents, inscribed bricks, votive tablets, were collected. The life of the ancient city and the temple was disclosed. The following year Dr. Peters returned to America and Mr. Haynes was chosen director of the third campaign.

The platform of the first King of Ur, who lived about 2900 B. C. was soon reached. Below this numerous bricks were discovered, bearing the name of the Great Sargon, who ruled in 3800 B. C., and who extended his powerful empire to the shores of the Mediterranean. Under the buildings of Sargon one of the largest and most important finds rewarded the explorer, an arch of brick was laid bare and carefully photographed, showing that the antiquity of the arch must be carried back indefinitely. The excavations have already gone thirty-five feet below the platform of the King of Ur, but they have not reached the foundations of this sanctuary, whose influence for over 4,000 years had been felt by all classes of the Babylonian people. Nippur, which is spoken of as the oldest city of the earth in the old Sumerian legends of the creation, has just begun to yield her secrets. Close upon \$70,000 have been spent on the explorations; over 30,000 cuneiform tablets have been recovered. These date from the time of the King of Ur to 2800 B. C., to that of the Cassite Kings or 1140 B. C.

The names of the early rulers of Babylonia have been restored to history; the records of the earliest Semitic rulers, comprising hundreds of inscribed bricks, door sockets, marble vases, and clay stamps, extending our knowledge of the Semitic race back to 3800 B. C. Of especial value are the 150 fragments of inscribed sacrificial vessels and votive objects, belonging to three kings of the oldest dynasties of Ur and Erech, which promise to cast an entirely new light upon the chronology of a difficult period.

Among the great number of seals and seal cylinders, there are some of every period of their history. Thousands of enameled clay vases of all sorts, playthings, weapons, weights, gold and silver ornaments, objects in stone, bronze and iron, several very ancient intaglios and bas reliefs have been secured, and a collection of human skulls and 200 clay bowls, which allow us a glimpse into the wizardry of Babylonia. The systematic and careful manner of laying bare the vast ruins of buildings and in exploring and depicting them, with a complete and connected view of the whole, is something without parallel in previous expeditions to Babylonia.

And when the University of Pennsylvania has completed her great undertaking at Nippur, there will belong to her and those who have shared in her

expedition, the unquestionable credit of having excavated the most important sanctuary, and at the same time the earliest "terraced temple" of this land of primitive civilization, and of having made intelligible its construction and its history."

The excavations at Tel-lo, which were begun by M. de Sarzec in 1887 and continued to 1894, have also been supplemented by American archæologists. The ruins extend about four miles, are situated about twelve hours east of old Warka, and represent a city which is called Shirpurla, in the old and Lagash in the later Babylonian literature.

The finding of a great number of inscribed door sockets which stood at the entrance of shrines and temples, the unearthing of thousands of clay cones and bricks, of bronze figures, metal and earthen vessels, and above all two great terra cotta cylinders of Gudea with about 2,000 lines of writing, have often been described. The view of Mospero of the earliest age of the Priest Kings of Shirpurla, is that they were from three to four hundred years before the first dynasty of Ur, or about 3200 B. C., but Prof. Hilprecht says: "My own recent investigations show that about a thousand years before the so-called first dynasty of Ur, there was a still earlier dynasty of Babylonian kings."

After years of continuous study, I at last succeeded in bringing order out of about 400 fragments of marble and sandstone vases, and was able to restore two royal inscriptions—one of 132 lines, the other of 28 lines—to establish the list of rulers for ancient Tel-lo, of which Ur Nina was the first, and to learn the names of his father and grandfather. Ur Nina was a prince who had founded numerous temples within the limits of his extended city, the principal deity of which was Nin Sugir, the personification of the parching mid-day sun.

The personality of Ur Nina is brought very near by the finds which consist of door sockets, votive tablets, bronze statuettes, an onyx vase, and above all three bas reliefs in lime stone.

"These three bas reliefs, which are partly square and partly oval, are of especial interest to us as monuments of the earliest Babylonian art. They all represent the same subject, more or less executed,—the King Ur Nina surrounded by his children and pages. The largest bas relief is forty centimeters high, forty-seven centimeters broad, and seventeen centimeters thick, and contains this representation most complete in its details. Like all other reliefs of the same type, and similar in this respect to the two intaglios found in Nippur, it is perforated in the center." [See frontispiece.]

This relief of Ur Nina is divided into two parts, an upper and a lower half; upon both the king figures as the principal person. He stands upon the upper part with a basket, the symbol of the Masons, on his head; upon the lower side he is seated, holding a goblet of wine in his hand, while behind him stands his cup-bearer, carrying the wine flask, from which he poured into the king's goblet. In both cases the king is clothed with a short garment which covers only the lower half of the body, the upper half is entirely naked. In order to express the dignity of the king and of his position, according to the ancient idea of both oriental and classic people, he is represented as a giant, so that in comparison with him, his children

and servants around him appear like dwarfs. It is characteristic that both halves of this, and also upon similar reliefs found in Tel-lo, the inscription begins on the head, and in most cases by the mouth of the king, though representing words flowing from his mouth, or spoken by him.

*The Discoveries in Arabia are next described by Fritz Hommel.* It appears that Dr. Edward Glaser has, since 1882, made four journeys to Arabia and brought not only a large number of new inscriptions from there, but has tried to prove that a whole series of inscriptions, called Minean, should be placed before the Sabeans. The two dominions in the northern part of Arabia, Magan and Milukh, the one on the Persian Gulf, and the other on the northwest of the Peninsula of Sinai, were in remote antiquity, in connection with Babylonia, for the renowned Priest-King Gudea brought the diorite which he used for his statues from Magan, and the wood used for ship building and gold dust from Milukh. The entrance gate to this arid and dreary mountain region, which Nimrod had to pass in order to reach the "Isle of the Blessed," the abode of his ancestor Noah, was guarded by the fabulous "Scorpion Men." This was the Havilah of the Bible. It was here that dwelt the Arabian princes who supplanted the Elamite dynasty about 2000 B. C., and brought it under their scepter. This represents the first known Babylonian dynasty, who were nomadic Semites, on the frontiers of Chaldaea, and gave the name of patriarch Shem to their god, but the names of the kings were purely Arabic. They were the kings, under whose reign Abraham lived. According to the researches of Glaser an entirely new light is thrown upon the period.

The unlucky expedition of Kedorloamer, who was associated with an Elamite king, brings out an incident of Abraham's life, but these explanations by Glaser show what was the state of letters, for texts written in the Minean dialect reach back to the second millennium B. C. The South Arabian inscriptions present an entirely new style and manner of writing. The writing is of the alphabet used in Southern Arabia. The theory of the greatest historical range, from perhaps 2000 B. C. to 800 B. C., assumes that the civilization of Southern Arabia was contemporary with the old Assyrian and the middle Babylonian, as well as of the Egyptian New Empire, and proves that there existed as early as 2000 B. C. a civilization in Arabia similar to that in Chaldaea. Glaser further proves that the Elamites invaded Babylonia about 1700 B. C. and attempted to colonize East Africa. The land of Gihon, the seat of paradise, was in Arabia.

We now possess about one thousand texts of the Royal inscriptions written in the Minean dialect. The age of these inscriptions runs parallel with that of "the Code of the Priests," and furnishes the best proof of the historical accuracy of Old Testament traditions.

The alphabet contained in the South Arabian inscriptions differs from any that has been known, but resembles the Cuneiform in some respects, though it is changed from the wedge-shaped to the angular and cuneate letters, approaching the Semitic or Hebrew. [See plate.]

*An Article by Wm. H. Ward, on the Hittites,* is interesting. It presents a view of the Mongolian race, with yellow skin, black hair, and in fact the first race who wore their hair with a cue. They have prominent nose, retreating forehead and chin, and a beardless face, and resemble

American Indians or the Chinese, and could hardly have belonged to an Assyrian or Semitic type.

We first find them in the annals of Tiglath Pileser, though their ancestor, Heth, is mentioned in the genealogical table of Genesis. They are localized in Hebron, for Abraham bought a grave for his wife from the sons of Heth.

Rameses I of Egypt was compelled to make peace with the Hittites in and during the reign of Amenophis IV. According to the tablets of Tel-el-Amarna, they had come down to Assyria and taken possession of Carchemish.

It is from this region that the pagan conjurer, Balaam, came to curse the children of Israel. They made a strong capital on the Orontes River. Hitherto chariots are shown on the temples of Karnak, where there is an illustration of a battle, in which Rameses II drove the Hittites into the Orontes.

Thus the accidental lights are thrown upon the history of the East, which confirm the Scriptures, and the revelations of the spade while in the hands of American explorers help us to understand more clearly the races which are described in the Sacred Record, for the pictures of their faces and their inscriptions wrought by their hands are brought to our very doors.

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#### THE KIVAS AND THEIR HISTORY.

It is in the estufa that we find the key to the history of the pueblos and a proof of the connection between the ancient and modern structures.

It appears that the kiva or estufa was originally a circular chamber, patterned after the circular huts, but it changed its form during the time that the cliff-dwellings were erected, and it finally assumed the rectangular shape.

The round shape of the estufa is most easily explained on the hypothesis that it is a reminiscence of the Cliff-dwellers' nomadic period. The construction of a cylindrical chamber within a block of rectangular rooms involves no small amount of labor. We know how obstinately primitive natives cling to everything connected with their religious ideas. What is more natural than the retention for the room where the religious ceremonies were performed, of the round shape characteristic of the nomadic hut? This assumption is further corroborated by the situation of the hearth and the construction of the roof of the estufa.

Mr. Mindeliff says: "The circular kiva is a survival of an ancient type—a survival supported by all the power of religious feeling and the conservatism in religious matters characteristic of savage and barbarous life; and while most of the modern pueblos have at the present time rectangular kivas, such, for example, as those at Tusayan, at Zuni, and

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A feature which seems to have also been found at the large pueblo on the Animas River.



at Acoma, there is no doubt that the circular form is the more primitive and was formerly used by some tribes which now have only the rectangular form, due to expediency and the breaking down of old traditions, was a very gradual process and proceeded at a different rate in different parts of the country. At the time of the Spanish conquest the prevailing form in the old province of Cibola was rectangular, although the circular kiva was not entirely absent; while, on the other hand, in the cliff ruins of Canyon de Chelly, whose date is partly subsequent to the sixteenth century, the circular kiva is the prevailing if not the exclusive form."

It will be noticed that the estufas which were connected with the ancient and ruined pueblos, both at San Juan and the Chaco, were all of them circular and generally placed inside of the area and in front of the terraces. They were probably used for ceremonial rites as well as for "council houses."

The estufas of the Cliff-dwellers were placed in front of the line of the houses and were generally entered from the top. Some of them were built in with the walls of the houses, the outside formed a rectangle which corresponded with the square rooms, but the inside was in the form of the circle—the walls being divided into six spaces with ledges, resembling broad window sills, alternating with abutments. The opening to the air-chamber was near the floor; the fire-place in the center, but was partitioned off from the air-chamber by a low fragmentary wall. This typical form of the estufas shows that the religious sentiment prevailed in its erection, and that it was a sacred chamber in which the four divisions of the sky and the zenith and nadir were symbolized.

Among the modern pueblos the estufa was a rectangular room with a division in the floor; the sipapuh, or place of emergence, being in the lower floor. The upper floor was the place of assembly, on this the ladder rested which led up to the opening in the roof, fire-place being generally between the foot of the ladder and the sipapuh. In these kivas, the roof was also divided into stories, the upper part being arranged so as to lead to the open air, the whole structure embodying in itself the myth concerning the origin of the people and the four caves through which they passed before they reached the surface of the earth. [See Plate.]

Thus we have three different forms of the estufa, each representing a different stage of development, but all showing the same origin and use, and embodying the same, similar, myths and religious symbols, viz: The myth of creation and the symbol of the sky and the universe.

As evidence of the development of the estufas from earlier forms, Mr. Cushing refers to certain painted marks on the walls of the cliff-kivas, which he thinks represent the posts which were planted at four equidistant points, and supported the large huts, or round houses, which constituted the abodes of the people, and correspond almost strictly to the poles of the primitive "medicine tent" or the "medicine earth lodge." In the modern square kiva of Zuni, there are still placed parallel marks, from the tops of the walls to the floors, every fourth year, which are called by the Zunis the "holders-up" of the doorways and roofs.

It is not improbable that the first suggestion of enclosing the round kiva in a square-walled structure, and of covering the latter with a flat roof, arose, quite naturally, before the Cliff-dwellers descended into the plains.

In the larger and longest occupied cliff-towns, the straight-walled houses grew outward, wholly around the kivas. The round kiva was not only surrounded by a square enclosure by the walls of the nearest houses, but it became necessary to cover it with a flat roof, in order to render continuous the house terrace in which it was constructed. An evidence that this was virtually the history, is found in the fact that to this day all the ceremonials performed in the great square kivas would be more appropriate in round structures, for the ceremonials are performed in circles, and the singers for dances and sacred dramas are arranged in circles.<sup>1</sup>

A still further evidence is found in the six niches and six pillars so characteristic of the cliff-dwellings, for in this was typified the arrangement of the world into six great spaces, corresponding to the "four quarters" and the "zenith and the nadir." The grouping of the towns of the Zunis, or of the wards in the towns, and of the totems in the wards, followed the same mythical division of the world, the ceremonial life of the people and the governmental arrangement having been completely systematized.

Believing, as the Zunis do, in the arrangement of the universe and in the distribution of the elements according to the same "world quarters," it was but natural that they should have societies or secret orders who should dramatize their mythology and devices for symbolizing the arrangement of the sky and the earth, and the central space or fire in their kivas, as well as in their larger compact pueblos.

Mr. Nordenskjold has referred to this point in describing the kivas or estufas of the Cliff-dwellers. He says:

"Of equal significance with this persistency of survival in the kiva, of the earliest cave-dwelling hut rooms, through successively higher stages in the development of cliff architecture, is the trace of its growth ever outward; for in nearly or quite all of the larger cliff ruins, the kivas occur along the fronts of the houses that are farthest out toward the mouths of the cavern, but some are found quite far back in the midst

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(1) See Zuni Creation Myths, Thirteenth Annual Report of Bureau of Ethnology page 264.

of the houses; in every instance of this kind the kivas farthest back, within the cell cluster proper, not only the oldest, but in other ways, plainly mark the line of original boundary or frontage of the entire village. In some of the largest of these ruins the frontage line has been extended, the houses have grown outward and around and past the kivas, and then, to accommodate increased assemblies, successively built in front of them, not once or twice, but in some cases as many as five times."

The traditions connected with the estufas are worthy of notice. Mr. Bandelier says of these :

Allusions occur in some of the traditions, suggesting that in earlier times one class of kiva was devoted wholly to the purposes of a ceremonial chamber, and was constantly occupied by a priest. An altar and fetiches



SIPAPUH AND PLUG.

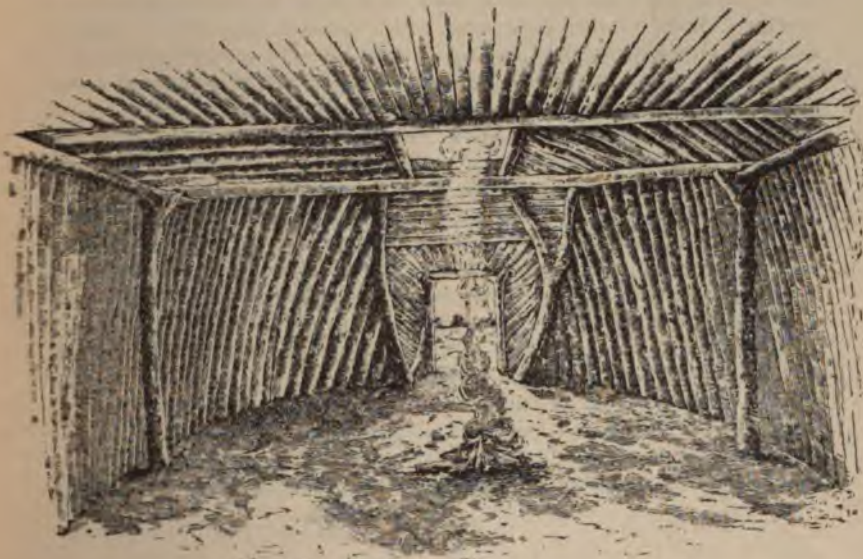
were permanently maintained and appropriate groups of these fetiches were displayed from month to month, as the different priests of the sacred feasts succeeded each other, each new moon bringing its prescribed feast.

Many of the kivas were built by religious societies, which still hold their stated observances in them, and in Oraibi several still bear the names of the societies using them. A society always celebrates in a particular kiva, but none of these kivas are now preserved exclusively for religious purposes; they are all places of social resort for the men, especially during the winter, when they occupy themselves with the arts common among them. The same kiva thus serves as a temple during a sacred feast, at other times as a council house for the discussion of public affairs. It is also used as a workshop by the industrious and as a lounging place by the idle.

There are still traces of two classes of kiva, marked by the distinction that only certain ones contain the sipapuh, and in these the more important ceremonies are held. It is said that no sipapuh has been made recently; the present operation is performed by the chief and the assistant priest, as with keepers of the society owning the kiva. Some say the mystic knowledge relating to its preparation is lost and none can now be made. It is said that a stone sipapuh was formerly used instead of the cottonwood plug now commonly used. The use of stone for this purpose, however, is new, though the second kiva of Shupaulovi contains an example of the

ancient form. In some of the newest kivas of Mashongnavi the plank of the sipapuh is pierced with a square hole, which is cut with a shoulder, the shoulder supporting the plug with which the orifice is closed. This is a decided innovation on the traditional form, as the orifice from which the people emerged, which is symbolized in the sipapuh, is described as being of circular form in all the versions of the Tusayan genesis myth. The presence of the sipapuh possibly at one time distinguished such kivas as were considered strictly consecrated to religious observances from those that were of more general use.

The designation of the curious orifice of the sipapuh as "the place from which the people emerged," in connection with the peculiar arrangement of



NAVAJO HUT—A PICTURE OF THE ORIGINAL KIVA.

the kiva interior, with its change of floor level, suggested to the author that these features might be regarded as typifying the four worlds of the genesis myth that has exercised such an influence on Tusayan customs; but no clear data on this subject were obtained by the writer, nor has Mr. Stephen, who is especially well equipped for such investigations, discovered that a definite conception exists concerning the significance of the structural plan of this kiva. Still, from many suggestive allusions made by the various kiva chiefs and others, he also has been led to infer that it typifies the four "houses," or stages, described in their creative myths. The sipapuh, with its cavity beneath the floor, is certainly regarded as indicating the place of beginning, the lowest house under the earth, the abode of Myuingwa, the Creator; the main or lower floor, represents the second stage; and the elevated section of the floor is made to denote the third stage, where animals were created. Mr. Stephen observed, at the New Year festivals, that animal fetiches were set in groups upon this platform.

It is also to be noted that the ladder leading to the surface is invariably made of pine, and always rests upon the platform, never upon the lower floor; and in their traditional genesis it is stated that the people climbed up from the third house (stage) by a ladder of pine, and through such an opening as the kiva hatchway; only most of the stories indicate that the opening was round. The outer air is the fourth world, or that now occupied.

There is to be found, throughout the Zuni country, ruins of the actual transitional type of the pueblo, formed by two ancestral branches of the Zunis—the round town, with its cliff-like outer wall merging into the square, and the terraced town, with its broken and angular or straight outer walls; towns from the round forms into the square. This was brought about by a two-fold cause. When the Cliff-dwellers became the inhabitants of the plains, not only their towns, but their kivas, were enlarged, and it became difficult to roof them over with cross-laid logs; hence, in many cases the kiva was enclosed in a square wall, in order that the rafters parallel to one another might be thrown across the top, thus making a flat roof similar to the terraced roof of the ordinary house structure.

There is evidence, also, of another kind, to show that this coming together was the chief cause of the changes referred to. The western branch of the Zuni ancestry, who were the people of the "Midmost," according to the myths, were, from the beginning, dwellers in square structures, and their village clusters, or pueblos, were built precisely on the plan of single house structures. When several of their dwelling places happened to be built together, they were combined, so the pueblos were simple extensions, mostly recti-linear, of these simple houses.

If the intruded branch of the Zuni ancestry were, as has been assumed, of extreme southwestern origin, we should expect to find structural modifications of the Cliff-dweller and the round town architecture. These ancient people, of the Colorado region, had attained to a high state of culture, in Southern Arizona and Northern Mexico; and at the time of their migration, built houses of a different type from those among the cliffs of the North.

Our conclusion is, then, that the history of the mysterious people who occupied the different parts of the pueblo territory is recorded in the very structures which they built but left behind them, and as evidence may refer to the fact that the pueblos of the Zunis and Tusayans were constructed by immigrants from different directions, the diverse character of the buildings showing that here are gathered the survivors from all the districts—the Cave-dwellers, Cliff-dwellers, Pueblos, and all the transitional types, showing even their migration routes, and giving hints as to their former location and their diverse origin.

## BOOK REVIEWS.

*The Mycenaean Age.* By Chrestos Tsountas and J. Irving Manatt. Houghton, Mifflin & Co., Boston.

The great work accomplished by Dr. Schlieimann has been supplemented by the explorations of Tsountas, a young Greek archaeologist. The whole work has been systematized and explained in a book called "The Mycenaean Age," written by Professor Manatt, having a short introduction by Prof. William Dorpfield.

It is fortunate for the science of archaeology that this old Achaian capital perished in the height of its bloom and rested undisturbed in its buried glory until Schlieimann's spade uncovered it twenty years ago. There were other Greek cities which were as splendid as this, but they have been despoiled and destroyed, and so the record has been impaired, but here we have the picture of a particular period carefully preserved, and have the opportunity of examining it in detail, just as in the ancient cities of Herculaneum and Pompeii, buried beneath the ashes and lava poured out from the mouth of the volcano, we have preserved the remains of a period of Roman history, with the people who filled it.

It was the calamity of war, rather than of nature, that came upon the other Greek cities, such as Tyrins and Mycenæ and Argo, as well as upon the ancient city of Troy; but in Mycenæ alone was the preservation of a single epoch, while in the others there were so many epochs represented by the different layers that it is difficult to distinguish them.

Three orders of masonry have been recognized in this ancient city: First, the Cyclopean; second, the Rectangular; third, the Polygonal, the last being much later than either of the others. This is a remarkable fact, for it enables us to understand the progress of masonry through the different periods, not only in Europe but also in America.

The great feature of the Mycenaean architecture is the "Lion's Gate," with its roadway, pointed arch, heavy lintell, and great triangular opening with its famous relief of two lions standing heraldically opposed—a gateway which is as distinctive of the Greek art as the lofty propylæa, at Karnak or Thebes, is of the Egyptian.

The aqueducts and drainages which furnish the water supply of Mycenæ may be compared to those at Jerusalem at the time of Solomon and later; but the palaces brought to light by Dr. Schlieimann in 1884 and explored by Tsountas are different from those found elsewhere. The palace of Tyrens occupies the highest of the three plateaus composing the Acropolis. To reach it you pass through an open entrance, traverse the high walled approach and enter the inner fortress by a great gate, then pass up to a large court, enclosed by a circuit wall, which bears a covered colonade, where you reach the outer gate of the palace. Within this gate is the great fore court, and beyond this the men's court, and the great halls and the women's court, hall and the bath rooms, all of them adorned with wall

paintings and probably covered by a roof supported by columns, with a clear story for the purpose of lighting, though there is some uncertainty about this. The palace of Mycenæ generally corresponds with that of Tyrins, and affords us a key to the comprehension of the Homeric Palace, for the substantial correspondence can hardly be disputed. At the foot of the great staircase at Mycenæ there are stone benches which represent the "smooth stones glistening with polish," on which Nestor with his six sons sat in family council.

The private house and domestic life of the Mycenæan age are next brought before us. The house had a pitched roof, and was two-storied, the lower without door or window. The upper story was used as a dwelling. In the interior furnishing, there were benches cushioned with rugs, easy chairs and tables. The utensils were copper jugs, skillets, bronze bowls and pitchers, ladles and spoons, alabaster vases (one of them ornamented with an octopus), glazed and unglazed vases, stone lamps (which shows that oil was used for lighting.)

The tombs at Mycenæ were more remarkable than the houses. There are three general types—the oblong pit like a modern grave, the beehive tomb and the rock-hewn chamber. The ring of slabs, which Dr. Schlei-mann thought uncovered the Agora of Agamemnon and his councilors, was really a charnel house of the Heroic age. In this were discovered 870 objects in gold alone, six diadems, gold crowns, gold combs, pendants, necklaces, bracelets, crosses, grasshoppers, butterflies, griffins, lions, idols in gold, wheels, goblets, vases, bronze caldrons, and gold beads. Five bodies literally smothered in jewels. The mere inventory is enough to show the barbaric splendor which prevailed in the Mycenæan age. A stele from the cemetery exhibits a charioteer with a four-wheeled chariot and a footman, and furnishes us a picture of the equipage of the warriors. A gold mask presents the features of a royal personage, and a gold diadem with crest shows to us the magnificent head-dress worn by the queen in the palace.

There was a superstition about the future life that led the people to bury these wonderful treasures with the dead, in the royal graves, for it was supposed that the future life was only a prolonging of the present, and those who dwelt in splendid palaces craved a corresponding abode after death. The tombs were fashioned for the dead and stored with offerings of great price, the pride of opulent families leading them to flaunt their splendor even in their tombs; and so the two motives contributed to the lavish adornment of the sepulchers; and our study of primitive civilization is greatly assisted.

The beehive tombs have preserved more tokens than have the cemeteries, for in these were treasuries of royal families, the treasury of Atreus, the treasury Minyas and Mr. Schleimann's treasury being the best specimens. The exact number of these tombs is unknown, though twenty-five have been discovered.

It is from the study of the relics from these tombs that the author has made out the picture of Mycenæan civilization, much to the credit of archaeology. First comes the dress and personal adornment. These are learned from the jewels, such as rings, signets, seals and plaques. The figures engraved upon them show exactly the mode of dress that was common. The arms and the armor are also made known by the seals, shields and

dagger blades, which are inlaid so as to represent hunting scenes, battles and sieges.

The mechanical skill is also exhibited by the engraved gems and the gold cups, as well as earthen vessels and pottery. They had saws and drills and chisels which would cut the hardest rocks. In gem engraving they were unsurpassed. The Waphio cups are the masterpieces of the Mycenaean goldsmith. These represent the scene of a wild bull hunt among the palms, the animals being in remarkable attitudes.

The writing in the Mycenaean age was ruder than it was in many other parts of the world. The specimens of writing from Tel-el-Hesi date back to 1500 B. C. These and the Cypriote alphabet and the Cretan resemble one another. It is called the linear system of writing. It is closely allied to the system of the Hittites.

The religion of the Mycenaean age is made known by the images, idols, and gems. There was a great preponderance of female deities. Artemis, who was the great nature goddess, and the personification of mother earth, being the most prominent; Aphrodite, whose cult was brought in by the Phœnicians, being next. There were not many structures built especially for the gods, though there were cave temples, grottos, and altars, which were sacred to them. The worship of ancestors preceded that of the gods. The "hearth divinities" were worshipped before the natural. These gave way to the worship of Zeus.

As to the date of Mycenaean culture, the author's supposition is that it prevailed from the sixteenth century to the twelfth. This was the *bloom time*. It fell before the Dorian migration. It was a native growth, not exotic. The Mycenaean cities were settled by immigrants, but the Mycenaean culture grew on Greek soil.

The clan system was a factor of prime importance. Each clan had its burial place, its clan village, and its clan estate. Near each village lay the common clan cemetery, a group of eight or more tombs answering to the number of families. The richer cemeteries lie near the Acropolis, as the stronger clans naturally dwell near the king. This is a new view of clan life, and yet it is plain that the "property in severalty" and "landed estate" had not come into vogue.

The book is in reality epoch making, for it brings the Mycenaean age so clearly to light that it cannot fail to awaken more general interest in the history of ancient art and especially that upon classic soil. The science of archaeology will also receive great advance, for the book shows that we can do without writing if we have archaeology for our teacher; in fact it is quite wonderful that so much can be learned from archaeology when properly followed. The publishers have shown their full appreciation of the science by giving so many beautiful illustrations, and by giving such an elegant form to the book, as the best of taste is displayed in every part.

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*Antiquities of Tennessee.* By G. P. Thruston. The R. Clarke Company Cincinnati.

The second edition of this interesting book has just been issued. It contains the matter that was in the first but with it several supplementary chapters. These supplements relate to the stone relics which have been recently found, and to the shell gorgets and engraved stones, that con-



tain human figures. The stone relics are mainly ceremonial implements, which were discovered within an aboriginal cemetery near the town of Waverly, 60 miles west of Nashville. In the collection there were 47 rare specimens of flint which vary from  $8\frac{1}{2}$  inches to  $21\frac{1}{4}$  inches in length and are very delicate and finely finished.

One of the shell gorgets was found in Sumner county, Tenn., and represents a dancing figure with a ceremonial weapon in one hand and a head in the other. Another gorget from Southern Illinois represents a dancing figure with a rude tomahawk in one hand and a wild turkey in the other. A third gorget is the one described by Thomas Wilson as taken from the Etowah Mound. It resembles the Buddhist statues, as the attitude of the figure, is the regulation ceremonial attitude which symbolizes the suastika and the generative principle, the legs being crossed Turkish fashion and the arms extended. The figure has wings on its back and from the wings projections, which remind us of the serpent, though there are no serpent heads, each end having concentric circles, with scalloped edges symbolizing the rays of the sun. Another shell gorget is the one described by Prof. Starr. It was found in the Ryerson collection. It is from Maratia State of Michoacan, Mex. It represents a dancing figure similar to those on the Tennessee gorgets, but lacks the apron and girdle and is without wings.

There are six rings or concentric circles around this figure, instead of four. There is also a "zigzag" upon the face, and a cobweb of symbol which resembles the concentric circles on the Wilson shell gorget.

An "engraved stone" from Sumner county, is represented in Fig. 249, on which is a winged figure resembling those on the copper plates from the Etowah Mound.

The new edition of this book which has given so much information about the Stone-grave relics, will lead the reader into the study of symbolism, and especially that form of symbolism which seems to have extended all over the continent and had its conventional forms which were quite similar, though always attended with variations, though the author, Gen. Thruston does not undertake to explain them.

Several interesting relics in copper, are described as follows: Plate IX. illustrates a number of objects of copper or copper-plated (natural size) No. 1 of the plate was probably used as a pendant or breast ornament. It was hammered from the native ore. It was recently discovered in a large artificial mound in Marshall county, Tenn. A beautiful platform pipe of red Minnesota pipe-stone and other objects of interest were found with it. The other specimens are ear ornaments of stone, terracotta and wood, all originally plated with copper. They were found in stone-graves of the Nashville district. Owing to oxydation, very little copper remains upon the terracotta and wood. The two large rings are double grooved. The cross in the center of No. 2 will be observed. It is not an unusual form in Tennessee.

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*The Finding the Remains of the Fossil Sloth at Big Bone Cave, Tenn., in 1896.* By Henry C. Mercer. Reprint from American Philosophical Society, Vol. 36, No. 154. 1896.

An effort has been made by the University of Pennsylvania during the last several years to settle the question of man's antiquity in North America through a study of the association of animal and human remains in caves.

but has resulted heretofore in a negation. The bones of extinct animals have been found in several fissures and caves, notably the fissure at Port Kennedy, but they belong to a different horizon, and are entirely separate from human remains. The fact that bones of the fossil Sloth were discovered years ago, in Cromer's Cave, West Virginia, by saltpeter diggers, and also with mastodon remains, near Bone Lick, Ky., also with bones of extinct animals at Natchez, Miss., and elsewhere, led the party to investigate the Big Bone Cave of Tennessee. It appears that Thomas Jefferson was interested in the subject, and the first remains of the creature discovered in North America were presented by him to this society in 1797, and was named by him *Megalonyx*, though he supposed it to be a kind of a lion such as the old explorers said they had seen and heard in American woods. These bones still remain in the museum and have been compared with those that have been recently exhumed by Mr. Mercer. His conclusion is that, "we must reasonably regard this animal as one of the common inhabitants of the American forests in pleistocene times, though we may well disbelieve that a creature weighing from twelve to sixteen hundred pounds ever moved from tree top to tree top, or hung with back downward to a single bough," as the South American Sloth is said to do; on the contrary we must imagine them inoffensive and sluggish animals.

It was, however, not the habits of the animal which was the object of search, but rather the question as to its association with man, and its survival to the human period. The author says: "A categorical demonstration that this individual animal was a contemporary of the geologically recent Indians in Tennessee must be abandoned, though the human handiwork in the form of charcoal and torch refuse lay only from six inches to one foot above any Sloth bone found. It seems safe to class the remains not only as geologically, but historically, recent; not more ancient in appearance and not more brittle than the bones of animals found by me in the Indian Midden heaps of several caves. The position of the bones in the upper and later part of the rubbish, their gnawed condition, and their association as described above, offer nowhere a suggestion of antiquity; on the contrary, like the Peccary bones found at Durham Cave, Penn., like the remains of the Tapir and Mylodon, discovered in Lookout Cavern, they seem modernized by their surroundings. We infer that we have found a species which long survived its day, and that we have modernized the fossil Sloth, if we have not definitely increased the antiquity of the Indian hunter, whose first coming the animal witnessed in the woods of Tennessee."

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*Researches Upon the Antiquity of Man, in the Delaware Valley and the Eastern United States.* By Henry C. Mercer, Curator of the Museum of American and Pre-historic Archaeology at the University of Pennsylvania. Ginn & Company, Boston, U. S. A., 1897. Price, \$2.00.

This is the sixth volume of the series in Philology, Literature and Archaeology, of the publications of the University of Pennsylvania, and treats of five different investigations by the author himself, and two papers upon the osteological remains, by Edward D. Cope and R. H. Hart, M. D.

The first is called "The Antiquity of Man in the Delaware Valley." An inquiry as to the age of some of the chipped stones, called "turtlebacks," in which is reviewed both sides of the controversy as to the age of man, de-

duced from the stone implements found in the Trenton gravel, in which he seems to find, from his own examination of the sites in question, many of the contentions of Prof. Holmes to be well founded. He then discusses the implements found in "An Ancient Argillite Quarry and Blade Workshop on the Delaware River," profusely illustrated by photographs of the various art products there found. It is one of the most skillfully treated articles upon this much discussed question that has yet appeared.

The second paper deals with the "Exploration of an Indian Ossuary on the Choptank River, Dorchester County, Maryland," where on a high bluff two deposits of bone, charred and uncharred, were found, but "no implement or trinket or object of workmanship, save a single fire fractured pebble, was found in either of the bone deposits."

In conjunction with this report, the late Prof. E. D. Cope gives the physical characters of the skeletons, and, as before noted, Dr. Hart considers the "Traces of Diseases in the Human Remains," etc., and reviews the subject of pre-Columbian syphilis, and although he believes this disease to have existed in America prior to the discovery, yet it is impossible in the skull in question to determine the source, but the abnormal changes, he thinks, are evidently due to syphilitic otitis.

The third investigation is "An Exploration of Aboriginal Shell Heaps, Revealing Traces of Cannibalism on York River, Maine." These heaps, or mounds, are located in York county, on the extreme southwestern coast of Maine. The estuary, forming a small land-locked harbor of dangerous access, opens upon the sea about nine miles north of the New Hampshire boundary and the mouth of the Piscataqua River.

The fourth and fifth are respectively, "The Discovery of Aboriginal Remains at a Rock Shelter in the Delaware Valley, Known as the Indian House," and "An Exploration of Durham Cave, Bucks County, Pennsylvania, in 1893."

These explorations show painstaking and careful methods of procedure, and the deductions are fair and rational. The style is clear and concise, and while there may be chance for disagreement as to conclusions, yet the author fairly states both sides of the question.

J. H. McCORMICK, M. D.

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*Brief History of the Nations.* By George Park Fisher. American Book Company, Chicago, 1896.

The marvellous task of concentrating a complete history into a volume of 600 pages has been undertaken by the author of this book, and has been as successful as could be expected. The statements are necessarily brief, and the history a mere summary, and yet it is as accurate and graphic, and as easily remembered as any summary can be. Mr. Fisher is the author of many other books, and is very industrious. The publishers have given the book a neat and substantial form, and have used cuts which show the progress made in archaeology.

The portraits begin with the mummied form of Rameses II and end with the great Premier of England, Gladstone, and the immortal Lincoln. They are all of them "up to date."

There are pictures of statues, tablets, temples, altars, and aqueducts specimens of art and armor, ships and house interiors, castles and forums.

baths and battle scenes, which owe their accuracy and correctness to the science of archæology.

The value of the book is found in the fact that it is written by a thorough scholar, and not "made to order," as many school books sometimes are, and as some "would-be" educators think all school books should be.

*Eden Lost and Won.* By Sir William Dawson, LL. D., F. R. S., etc. Fleming H. Revell Company, New York, Chicago, Toronto, 1896.

The first question which the author of this book raises, is concerning the personality of Moses. His position is: (1) That inasmuch as there have been discovered, in certain parts of Egypt, infants "packed in boxes," which are referred to the early dynasties, the Egyptians were then accustomed to the policy of forced labor. (2) The discoveries of Naville at Pythom proves the account by Moses to be correct, for Pythom was a "stone city" in the time of Rameses. (3) The evidences are that the "days of Moses" were the most advanced in the history of Egypt. Lockyer has shown that the Egyptians had mapped out the heavens, established the Zodiac, discovered the ecliptic, the equator, and even the precession of the Equinoxes, and Brugsch has shown that letters had reached a high stage, for there was correspondence from all the civilized world, in many languages and various forms of writing—Phœnician, Minæan, Chaldean, and Assyrian. (4) The description contained in the Scriptures implies a truthful portraiture of the time and place, as well as the personality of Moses. (5) The book of Genesis relates to anterior times. The first part covers 3,000 years of history, including the story of creation. The second part extends over only 430 years, and gives the history of the rise of the nation of Israel. (6) It is not known how Moses learned the "Story of Creation," but it corresponds closely to that given in the Chaldean and Assyrian tablets, and yet is much clearer and briefer and more in accord with the facts made known by science. (7) As to the existence of an Eden, the story of the Golden Age naturally implies this, but the location as given in the Scriptures corresponds to the testimony of history, for the old Babylonian "Gan Eden," situated on the Euphrates, was divided into four parts, and surrounded by four rivers, reminding us of the "four quarters" of the earth, as held by the American tribes. (8) As to the Deluge. "The earliest human age is separated from the historic by the Deluge, as the Paleolithic from the Neolithic by the great post-glacial submergence." (9) Before the Flood there were three divisions of the human race—Sethites, Cainites, and "Giants," as there were three races in the Paleolithic Age in Europe—"Troll," "Truchire," "Constadt," and the gigantic "Cromaguon." (10) The primary division of the race as described in the Bible corresponds to that given by science, the Hamites, Semites, and Japhetites corresponding to early Accadian or Turanian, the Semitics and the Asyrians. (11) The route of the Exodus from Egypt is confirmed by history and archæology. The turning of the Israelites from the "way of the Philistines," back to the east of the Red Sea was designed to escape the fortified cities and to pass through a friendly region familiar to the people, and the crossing of the Red Sea was at the very place where "nature and the supernatural" could best work together. These points are all brought out in a popular manner.

The author does not stop to discuss them, and does not seem to fear the archaeological critics. Some of the facts stated are the results of his personal observation.

The two last chapters are treatises on "Man Primeval," the "Fall" and the "Restoration," but do not really strengthen the Biblical narrative, except in an indirect way. The change from a "Garden" to the "City," from the "Streams of Eden" to the "River of the Water of Life," the "Tree of Knowledge of Good and Evil" to the "Trees of Paradise," exhibit the advance which is in accord with the designs of providence, and proves also the "survival of the fittest," in the highest and best sense.

The book is very suggestive and exceedingly interesting, and its price, \$1.25, is within the reach of everyone.

### RECENT EXPLORATIONS.

*Flint Implements*—A French scientific expedition has recently returned from Cochin China to Paris, bring with it valuable collections. Among these were a large number of wrought and polished flint implements, some of the most interesting of which are described as follows in *Popular Science News*: These flints are finely worked and polished, and if found in Europe would have been attributed to the Neolithic period of the human race. At present there is no way of estimating their age, which may be comparatively modern as compared with that of the similar implements found in Europe or America. It is very remarkable that the forms of these flint implements are practically the same in whatever part of the world they may be found. The prehistoric man of Cochin China worked the lumps of flint into the same forms, and probably by the same process, as did the men who settled in northwestern Europe after the melting of the glaciers, or those mysterious progenitors or predecessors of the American Indians, whose remains are so abundant in this country. A still more curious fact is that all over the world the same origin is attributed to these stones by the people of the present day. The name of thunder stones is universally applied to them by the savage races of the East Indies, the South Sea Islands, Africa and South America, as well as by the more civilized people of China and India, and the ignorant peasantry of Europe. In Italy alone a curious exception occurs in some localities, where the long, flat implements are known by the remarkable name of "the tongues of St. Paul." All recollection of the people who made them, or the uses for which they were designed, seems to have been lost; and this would either indicate their great antiquity or that they were fashioned by another and different race before the immigration of the present inhabitants of the countries where they occur.

*Value of Missions to Science*—By the pursuit of several departments and fields of enterprise—embracing exploration, languages, geography, history, tribal negotiation, ethnology, mineralogy, etc.,—in addition to the civilizing of the laws, habits, and morality of various races, missionaries have received repeated acknowledgments from every quarter of the globe. Oriental scholarship, the medical writings of Dr. Hobson of Hong Kong, Morrison's "Chinese Dictionary," Dr. Legg's "Chinese Classics," Hewlett

works in Urdu, and similar standard volumes, give point to the English "Spectator's" observation, 'that no class of men on earth, except German professors, would attempt to rival English missionaries in linguistic attainments.'

*Great Discovery in Egypt*—We do not get over our astonishment at one great archaeological discovery before another is sprung upon us. While the Grenfell manuscripts are being copied for publication, we are told that M. de Morgan, who is in charge of the explorations of the Egyptian Government, has just opened a tomb, between Memphis and Abydos, in which were twenty-one chambers with coffins, mummies, etc., belonging to the very earliest period, of or before the first dynasty. There were pieces of furniture in ivory, a statue in wood, statues in bronze, alabaster vases, vessels cut out of rock-crystal and quartzites, and hieroglyphs of a type so archaic that it will be difficult to read them. The sarcophagi will be opened at the Gizeh Museum, when it will be found what kings they represent. The paintings on the walls are somewhat in the style of those in later tombs and represent the achievements and funeral rites of the king, including the representation of the body being conveyed in a great sledge, drawn by oxen and men, across a sacred valley to the tomb. It is to be hoped that the hieroglyphic texts may give an early edition of the Book of the Dead, and that this discovery may shed some new light on M. de Morgan's theory that the early Egyptian civilization came from Babylonia. Such discoveries are now exciting great popular interest.

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#### NOTICE.

The meeting of the A. A. A. S., at Detroit, Aug. 9 to 14, will be followed by a joint meeting with the British Association at Toronto.

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The Associate Editors for 1897 and their Departments will be as follows:

DR. D. G. BRINTON, Philadelphia—European Archaeology.  
REV. WM. C. WINSLOW, D. D. LL. D., Boston—Egyptology.  
PROF. T. F. WRIGHT, Cambridge, Mass.—Discoveries in Palestine.  
J. FRASER, LL. D., Sydney, Australia—Polynesia.  
A. S. GATSCHET, Washington, D. C.—Indian Linguistics.  
DR. J. H. McCORMICK, Philadelphia—Oriental Lands.  
W. H. HOLMES, Chicago, Ill.—Central America.  
REV. JOHN McLEAN, Alberta—Canada.  
JAMES DEANS, Victoria, B. C.—The Northwest Coast.

These gentlemen will furnish notes, from month to month, and so will keep our readers informed as to all that is transpiring in the line of Archaeology throughout the world.

A large number of NEW CONTRIBUTORS have been secured, many of them very best scholars.

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The volume for 1897 will contain a series of articles from prominent Geologists on such topics as the following: "Earth and Man," "Man and Nature," "Man, Mastodon and the Raines," "Ice and Agriculture," "Forest and Prairie," "Scene and Society," "Soils and Seasons," "Earth's Preparation of Man." All of these will be fully illustrated.

These subjects belong to a new department of study to which scientific men are now giving much attention. The AMERICAN ANTIQUARIAN is the first journal to take them up as a series. The object of these articles is to present the practical side of the science of Geology as connected with Anthropology, or, in other words, "The Meeting Place of Geology and History."







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OMITLÁN, A PREHISTORIC CITY IN MEXICO.

BY WILLIAM NIVEN.

The ruined city of Omitlán is in the State of Guerrero, which lies between  $16^{\circ} 10'$  and  $18^{\circ} 47'$  N. Lat., and  $97^{\circ} 55'$  and  $102^{\circ} 15'$  W. Long. (Greenwich). The southern boundary of the State is the Pacific Ocean, and its principal port is Acapulco.

The ruins are on the eastern outskirts of a region which covers about 6,000 square miles, to the northwest of the capital, Chilpancingo. This city I visited five years ago while travelling in Guerrero in quest of minerals, and saw at the Governor's palace a collection of antiquities, including idols of stone, domestic utensils, war implements, articles of personal adornment of jade, jasper, diorite, onyx, obsidian, and even rock crystal. These objects, I was told, came from the neighborhood of the Indian village of Xochipala. I visited the place and the chief of the pueblo showed me many articles like those in the Governor's palace.

When I returned to New York I saw the president of the American Museum of Natural History, Mr. Morris K. Jesup and described to him the interesting antiquities I had seen at Chilpancingo and Xochipala. He immediately agreed to defray the expenses of a forty days' trip through the country. I visited Xochipala again, accepted the Indian chief's offer to furnish me with a guide, and brought back with me more than four hundred archæological objects, which are now on exhibition at the American Museum of Natural History, and comprise the Jesup Collection of Mexican Antiquities.

I had seen enough to satisfy me that I had made a discovery of great archæological importance and I began negotiations with the Mexican Government for the right to explore the State of Guerrero for antiquities. These negotiations

were prolonged and were still going on when I left York in July, 1896, for a more extended survey of the ruins. I was kindly received by the Chief of Xochipala and furnished with guides and workmen. The first indications of the ruins were observed about half a day's journey west of the village. We came upon foundations of buildings, then upon walls three or four feet high of structures, which measured 40 to 100 feet square, and pitched our tent on the top of a hill in a temple with clearly defined walls 300 by 200 feet. In the center was an altar of solid masonry 15 feet square at the base, in good preservation, and nearly 20 feet high. At each corner the foundations and part of the walls of circular towers 6 feet thick were plainly visible. Photographs were obtained at various points, but owing to the dense and thick tropical underbrush it was difficult to show the ruins and temple as they really appeared. Resuming our search, we travelled over ruins every few hundred feet for six miles. On the following night we camped at another temple where we took several interesting photographs. A trench was dug, and in one of the altars we found a plaster wall, and on the plaster floor an abundance of beads and broken pottery, two diorite celts or chisels. After travelling six hours over ruins at nearly every step, and crossing the great range of Xilitlahco, we finally reached the western boundary of the ruined city.

The first excavation revealed the ruins of a building erected with unusual skill, the stones having been cut of equal dimensions, about 18 x 12 x 10 inches. We found ourselves in a circular chamber filled with dust and fragments of timber which crumbled at the touch, and with broken plaster painted a brilliant red and white. The plaster must have been of excellent quality. Mixed with this debris were large boulders and gravel. In the center we were surprised to find human bones, and a perfect skeleton of a dog has been pronounced by Dr. Wortman, of the American Museum of Natural History, to be a Mexican dog. A prehistoric Mexican dog is a novelty. Professor F. W. Putnam of Harvard, is making a special study of the subject, and would like to have the whole skeleton which was found. The chamber was cleaned out, and on the floor were found large quantities of stone beads, idols, masks and head of diorite.

Travelling a mile south, we entered a mound from the east and west side, following a plaster floor, from which we picked up a number of beads of green jade and serpentinite. A peculiarity of this jade has been noted, that no material

Of the same kind is found in Mexico. The jade of Australia and South America does not resemble the jade found in these Mexican ruins. Jade found in China does resemble it somewhat, and the question is asked whether there ever was any connection between China and the ruined city.

After a day's ride almost due south, we found on the side of a steep hill a large cut stone, 7 feet x 2 feet, on which is carved the figure of an Indian, and near the summit two idols, one of which measured five feet in height. About ten miles east, at a place called Chalchiutepetl, "The Hill of the Precious Stones," we found the greatest number of green diorite and jade beads, also shell ornaments, a copper bell, dress ornaments, a seal of terra cotta, and a peculiar object resembling an Egyptian tear-bottle. Here we discovered two pyramids, one of them more than 60 feet high. The hill appeared to have been smoothed down and then faced with small cut stones about 8 x 6 x 4 inches.

Some of the most interesting idols were found here; one with curious marking on the breast—a symbol of fire, and on the face a striking expression of pain. They are all made of hard stone, diorite and jade. A tablet with hieroglyphics was found near this place, 3 feet  $1\frac{1}{2}$  x 1 foot, and although much obliterated is an indication of what this interesting locality is likely to yield.

About ten miles south we found a quantity of bone and shell beads, and within a space of 12 inches two dozen finely formed lance heads and two small masks. Close to these was a layer of human bones four to six inches thick and twenty feet in length. The skulls appeared perfect, but fell to pieces at the slightest pressure. The canine teeth seemed to have been ground flat. This deposit of bones could be plainly seen from the canon twenty-five feet below.

Going north, we found most of the buildings buried. In one passageway on the divide there were two chambers filled with ashes, stones and pottery, and two green stone masks, and a mile south of this we came to a wall fourteen feet in height and two and a half feet thick. The material was limestone, and the mortar in some places was as hard as the stone.

A day's journey north brought us to the remains of an arch 30 feet high, and the foundation of an edifice covering several acres. In a mound not far off we uncovered the front wall of a building. Near the top were twelve stones shaped like sugar loaves, and laid side by side with the broad end projecting. We dug up heads of trachyte and jade, and many circular stones like grindstones.

Eight miles to the westward was found a temple with extraordinary dimensions of 600 by 200 feet. After days spent in digging at this place, we came upon a olla, or jar, filled with mother-of-pearl objects. Many of these were in the form of fishes, and four were kingly headdresses with a head dress. All were perforated.

My survey extended over a space of several hundred square miles. The country was a succession of ridges and ravines, and every ridge was covered with ruined structures. Should additional excavations have been made, it would be idle to speculate regarding the inhabitants of the ruined city. An extensive research by an expedition which I expect to organize may settle many questions as to their identity.

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## MYTHOLOGIC TOTEMS.

BY STEPHEN D. PEET.

The patriarch Jacob, just before his death, called his sons together and prophesied their future destiny and the tribes that were to descend from them. In doing so he used certain symbols or emblems which were probably prevalent in their tribal escutcheons, and made these the basis of his prophecy. The following is his language: "Judah is a lion's whelp;" "The Scepter shall not depart from Judah until Shiloh come;" "Issachar is a strong ass couching between two burdens;" "Dan shall be a serpent by the path, an adder in the path;" "Naphtali is a hind let loose;" "Joseph is a fruitful bough, even a fruitful bough by a well;" "Benjamin shall be a wolf, in the morning he shall devour the prey and at night divide the spoils."—Genesis Chapter 48: 8, 14, 17, 21, 22, 27. In these expressions we have a series of word pictures which clearly portray the characteristics of the different tribes, their history, as well as a description of the geographical localities they occupied. How the patriarch came to use this language is a mystery, but there may have been a picture language prevalent in the patriarchal age which he used to designate the traits of each one of his children. To show that the history of each one of the tribes should descend from them, would partake of these traits known that at a very early time significant names and emblems were given to individuals, and that these were transmitted to the children, and as their posterity increased, they bore

tribal emblems. There were also dreams which were prophetic, and it may be that the patriarch in his dreams saw the emblems which belonged to the different sons, and in them read the history of the tribes which should be raised up from them. Whatever the explanation is, the passages furnish a good illustration of a custom which was common among the uncivilized races, and is still prevalent among the aborigines of America, namely: the custom of giving the names of animals and plants to the children, and making these serve as emblems of the clan or tribe.<sup>1</sup>

In most of the tribes these names were given by the mother, or rather were taken from the clan to which the mother belonged, and were transmitted by a fixed law, for the children by the law of matriarchy, always belonged to the clan of the mother, and carried the name and emblem of that clan. It was in this way that the clan, tribal and family names first appeared. They were not names which were taken from the employments, occupations, or trades, nor were they names which were descriptive of personal exploits or incidents such as some of the Indians have borne, nor were they arbitrary nick names which were given to describe the characteristics of the individual, but they were ancestral names and resemble in this respect surnames which are now extant. The main difference between the historic and prehistoric surnames was that the latter were always the names of animals which were regarded as ancestors, while in historic times, surnames were derived from occupations, etc.

Occasionally there was a name which was altogether private, and which might be called the dream name for it was the name of some animal which appeared to the individual in a dream. These dreams came after long fasting, and were the result of the hidden exercises of the mind which would naturally occur before the initiation of warriors. When the vision of some animal appeared, the young man felt himself prepared for his initiation as a warrior, and as he presented himself for the rite he would take the skin of the animal or some figure of it as a personal fetich or charm and would join the society which bore the name of the animal that had

<sup>1</sup> Among certain tribes there was a change from matriarchy to patriarchy. In such cases the children took the name of the father's clan and bore the emblem or sign which belonged to the father.

Maj. J. W. Powell holds that matriarchy prevailed among the people who were in the status of savagery but changed to patriarchy when they reached the status of barbarism. See 15th Annual Report of Bu. Ethnology Intro. He also gives the name clan to a group of people reckoning kinship in a female line; the name of gens to a group of people reckoning kinship in the male line. When tribes unite in confederacies, artificial kinship is established as a legal fiction, and the members of one tribe know the members of another tribe by the artificial emblem, which they wear, and address them by kinship terms. Adopted members are given artificial kinship, and have the same rights as those who are born into clans or tribes.



THE DAKOTA INDIANS, IMITATING THE ATTITUDES OF THE BUFFALOS IN THEIR DANCE.



MYTHOLOGIC AND ANIMAL TOTEMS—FROM CATLIN'S INDIANS.

tin says these symbolic writings or totems are found recorded on rocks and trees, a robes and wigwams, and are very numerous.



appeared to him.<sup>1</sup> In this way there arose a system of religion which was very wide-spread and very powerful among all the hunter tribes of America which was called totemism.<sup>2</sup>

Now it is to this totemism that we shall devote the present chapter.

I. We shall begin with a description of the system and the new kinship introduced by it.

(1) There were two kinds of kinship, the natural and artificial. The natural was that system which led to giving the names and emblems of the mother or father to the children, but the artificial was that which introduced into all the totemistic tribes a new relationship which transcended kinship according to the flesh. According to totemism, every male person must marry outside of his clan. The children which were born belonged to the clan of their mother and took the name of her clan rather than that of the father. There were a few tribes, like the Dakotas for instance, in which the law of matriarchy was changed to patriarchy, and the children in that case took the name of the father but it was generally the mother who gave the name. The name was taken always from some animal, and generally from one that abounded in the region.<sup>3</sup>

(2) This relationship which came from history and from religion, dated back to the time when the different tribes were clans of one tribe, and so were descended from a common ancestor. The power of religion and regard for ancestry, led the people to value the archaic kinship as more binding upon the families than the relationship which then existed.

<sup>1</sup> Miss Alice Fletcher says: The Indian's religion is spoken of as a nature and animal worship. Careful inquiry and observation fail to show that the Indian actually worshipped the objects. More faith is put in the ritual, and a careful observance of forms than in any act of self denial in its moral sense, as we understand it. The claim of relationship is used to strengthen the appeal.

<sup>2</sup> The name was derived from an Ojibwa word which signifies tribe or family, but brings to view a system which was very wide-spread and very powerful, especially among the hunter tribes. It was in fact the system according to which nearly all aboriginal tribes were organized, and which also embodied their tribal history and regulated their tribal customs, but itself arose out of their mythology and especially out of their cosmic myths. In the east it was called animal worship and the name animal tribe was given to those who practiced it. In America the term totemism is used, for it brings up the thought of the peculiar relationship which was involved, and dismisses the idea of worshipping animals which is very subordinate, if it existed at all. There was a reverence for animals inasmuch as certain animals were regarded as ancestors of the tribes, and a few were also regarded as mythologic beings who were both "Culture heroes" and "Creators." These emblems or figures were very prominent in the "bark records" and picture writings.

<sup>3</sup> Mr. J. O. Dorsey says: "The Dakotas have animal names for their gentes and tribal or clan taboos. Each man has his personal taboo and his personal name. The personal names give the color of the animal. Some of their names suggest myths." (See Indian personal names. Amer. Anthropologist for July, 1890.)

Walter Fewkes says: "Among the Tusayans names of animals have the preference over plants, there being 46 of the first and 21 of the latter. It is natural that gentes named from horned animals, foxes, coyotes and wolves, should go together. But why the ants should be associated with the horn people is not so clear unless we trace back to the history of their migration."

Captain Bourke says: "If clan names were originally topographical this does not militate against the idea that to the mind of the American savage the animals have always been gods, and in some vague way connected with the mystery of human creation."

(2) It was a fraternity which ran through the different tribes of a stock or confederacy, and which brought together all of the clans which bore the same animal name and had the same totem, and made them brothers.

To illustrate: The Iroquois, who dwelt in New York, were composed of five tribes, each tribe was divided into ten or twelve clans named after animals—the wolf, bear, beaver, turtle, deer, snipe, heron and hawk. The tribes lived in the different parts of the state, and each tribe had its own council house, head chief, sachems and specific territory. They were named and situated as follows: Beginning at the east, Mohawks, called "The Shield," next the Onondagas, called "Name-Bearer," Oneidas, "The Great Tree," Cayugas, "The Great Pipe," Senecas, "The Door-Keeper," as they were the perpetual keepers of the door of the "long house."<sup>1</sup>

A person who belonged to the wolf clan could travel along the trail which led from tribe to tribe, and would find the members of the wolf clan ready to receive him and protect him, and give him a home among them as if he was their own brother, as they were brothers according to an archaic fraternity which bore the same fraternal emblem.

There was also an emblem which every one carried about his person which indicated the clan to which he belonged. This may have consisted in the picture of an animal inscribed upon an amulet, or it may have consisted in the custom of cutting the hair, making the moccasins, or wearing apparel, or of ornamenting the person or tattooing the face. Whatever the emblem was, it was equivalent to a coat of arms, and was a native heraldry. This heraldry was recognized everywhere as significant of a totemistic brotherhood. It was complemented often times by sign language, for each tribe had a name which could be expressed by signs.

The Pawnee, whose clan totem is the wolf is seen in a plate given by Catlin holding up the hand and fingers so as to show the wolf's ears. Among the Arapahos and Dakotas the manner of cutting the hair was such as to make the head at once suggestive of the animal or bird whose totem the person carried. A tuft over the forehead and back of the head and ears resembling the wings, head and tail of the eagle, showed that the person belonged to the Eagle clan. The ridge of hair which was left on the crown, resembling the back of the buffalo, showed that the person belonged to the buffalo clan.

Among the Haidas of the North West Coast the figure of the squid, or eel, or cod, or sculpin, the double figure of the wolf tattooed upon the arms, chest, breast, or back or shoulders of the man and woman would indicate the clan or tribe to which they belonged.

This heraldry was equivalent to that which belonged to the royal families of Europe, and with some of the tribes symbolized the genealogy of the family and the exploits and traditional history. It was as much a sign of fraternity as the pins, badges and other symbols which are worn by the members of the

<sup>1</sup> Mr. L. H. Morgan says: "All the members of the same gens whether Mohawks, Oneidas, Onondagas, Cayugas or Senecas were brothers and sisters to each other, in virtue of their descent from the same common ancestor, and were recognized as such. One of the gentes, wolf, bear and turtle were common to five tribes. The deer, snipe and hawk were common to three tribes.—Ancient Society, p. 133.

various secret societies and college fraternities, but introduced a brotherhood which was stronger and more sacred than that which came from these societies.<sup>1</sup>

(4) According to Mr. Morgan, there were two changes. First. The change of descent from the female line to the male line. Second. The change of inheritance of the property of the deceased member from the clan or gens in the collective capacity to the agnatic kindred, and finally to the man's children.<sup>2</sup> Yet there were certain rights and privileges which inhere in the system. These were as follows: (a) The right of electing chiefs. (b) The right of inheritance of the property of deceased members. (c) The right of bestowing names upon members and adopting strangers into the gens. (d) The right of help, defense and redress of injuries. (e) Right to a common burial place and a share in religious ceremonies. (f) Right to a representation in council of the gens. (g) Obligation not to marry in the gens. All these rights and privileges were enjoyed by those who bore the clan emblem. The totem which he carried on his person brought an obligation on the clan which bore the same totem to defend him. They were all brothers, not by kinship, but by religion.

(5) In some tribes the communistic system prevailed. The families and persons which belonged to a particular clan had a share of the food which was to be had, whether it was in his own family or in some other family. The supply was to the clan rather than to the household. This did not always exist, for there were tribes where the family lived separate, and had its provisions separate, but it was very common. In such a case the totem may be said to have brought the provision to each person.

(6) The inheritance of landed property was in the clan. There was no property in severalty among the uncivilized tribes. The property and effects of the mother passed to her children, and in default of them, to her sister's children, but always remained in the clan. This is the case among the Algonquins. Among the Lagunas the land is held in common as the property of the community, but after a person cultivated a lot he had a personal claim to it which he could sell to any one of the community. Among the Iroquois the property was hereditary in the gens. Consequently, children took

<sup>1</sup> Mr. Morgan, who was initiated by the Iroquois, says: "The gens embraced all such persons as trace their descent from a supposed common ancestor through females. The evidence of the fact was the possession of a common gentile name. It does not include all the descendants of a common ancestor, but all who bear the name are entitled to the totem. The gentile organization originated in the period of savagery, endured through the three sub-periods of barbarism, and finally gave way when the tribe attained to civilization and the land and property took the place of kinship."

<sup>2</sup> See *Ancient Society*, p. 74.

nothing from their fathers, but inherited their mother's effects.<sup>1</sup>

(7) The history<sup>2</sup> of the clans is thus given by the totem. It appears that the different tribes grew up together and bore the names of a common ancestry, as the animal names of the clans were repeated in every tribe. This, to be sure, varied in the different tribes, for there were in some of the clans, or gentes, sub-gentes, which took other names. There were also clans which became incorporated in certain tribes, and these introduced certain emblems or totems. Still, even with this confusion the history of the tribe could be traced in the totems.

(8) The government of the clan was influenced by totemism. The office of sachem or civil chief is hereditary in the gens, but elective among the members. Each gens had the power to depose as well as elect its chiefs.

Carver says of the Dakotas: "The office of sachem, or clan elder, passes from brother to brother, or from uncle to nephew. That of war-chief was bestowed as a reward of merit and was not hereditary. The sachem has more immediate management of civil affairs. His assent is necessary to all treaties."<sup>3</sup>

Among the Winnebagos the sons of a deceased chief were not always eligible, for on the death of a chief his sister's son succeeds him in preference to his own son.<sup>4</sup>

"A practice was common among certain tribes, such as the Shawnees, Miamis, Sauks and Foxes, of naming children into the gens. This would enable a son to succeed his father in office, and enable the children to inherit the property from the father. The father had no control over the question of naming the children. It was left by the gens to certain persons, most of them matrons, who were to be consulted when children were to be named, with power to determine the name to be given."<sup>5</sup>

Herrera remarks of the Mayas: "They were wont to observe their pedigrees very much, and therefore thought themselves all related and were helpful to one another. They did not marry any that bore the same name as their father. This was looked upon as unlawful."<sup>6</sup>

"The Laguna Pueblo Indians are organized in gentes with descent in the female line. Each town is divided into tribes or families, and each of these groups is named after some animal, bird, herb, tree, plant, or one of the four elements. Some are called bear, deer, rattlesnake, corn, wolf and

<sup>1</sup> See *Ancient Society*, p. 153.

<sup>2</sup> It was a totemistic history, rather than a genealogical or tribal, inasmuch as every clansman began his history at the time he was initiated and received his new name. The experience in the dreams may be compared to conversion in modern times, for it was always very remarkable.

<sup>3</sup> See *Ancient Society*, p. 155.

<sup>4</sup> See *Ancient Society*, p. 157.

<sup>5</sup> *Ancient Society*, p. 169.

<sup>6</sup> This shows that patriarchy existed among the Mayas.

water. The children are of the same tribe, (gens) as their mother."

There are many other characteristics to the totem system but those which have been spoken of will show how powerful and far-reaching it was.

II. We therefore turn from these to speak of the relation of totemism to the native mythology. Here let us say that there was a native mythology in America which was as varied and interesting as that which prevailed in Scandinavia, India, or even in classic lands.

This mythology had not reached the stage where personal divinities were recognized and myths invented to celebrate their exploits, nor had it reached that stage where the nature powers and heavenly bodies were deified, or at any rate, to no such extent as they were in the Far East, though there were certain myths that celebrated the exploits of the mountain divinities, and others represented the nature powers as humanized divinities. The chief peculiarities of American mythology was that it abounded with animal divinities and rung the changes as to the exploits of these, viewed as personal beings or as humanized animals.

It is interesting to go over the different parts of the continent to see how the animals were deified and made to represent supernatural beings.

It would seem as if the whole sky and earth, and even the waters under the earth were filled with the imaginary beings who bore the animal form and yet had human attributes. This can be accounted for on the ground that totemism was the prevailing religion and the myths were about the animals which were worshipped as totems. It is in this way that the early history of totemism was transmitted and the meaning and object of the totems were made known. This gives to the mythology a very great value, inasmuch as it shows that the origin of totemism was in mythology, and the myths were the chief means of preserving the totems. The following classification of the myths is interesting on this account:

1. There were myths about the animals which were regarded as ancestors which would make those animals very sacred to the clan, for they were repeated at the fireside and in the hearing of the children until they became as household words and the animal ancestors seemed realities.
2. There were creation myths, which also perpetuated the same system, as the great creator or first ancestor, or culture hero, often bore an animal name and was represented under the animal semblance.
3. There were myths also which gave the idea of protection to the people, for they were full of marvelous exploits of the great animal who was regarded as the ancestor of the clan, or tribe, or village, or individual, and these exploits were a pledge of security to those who bore the totem or emblem.
4. There were also

myths which perpetuated the history of a tribe. Sometimes these myths carry the tribe back to their original home or starting place, and show how, when and where they received their first totems and how they changed them during their migration. 5. There were myths which showed the ownership that came from inheritance, as the totem of the individual or family was placed upon every utensil, weapon, keepsake and article of furniture that belonged to the individual, and became a kind of monogram. 6. There were myths perpetuated by the secret societies, which made known the migrations of the tribes and at the same time predicted the future state of the persons who were initiated. Among the Ojibwas, the first degree of the initiation was full of the symbols of creation, but as the candidate went on through the different degrees the different animals which represented the clan totems were found to guard the entrance. The bear spirit guarding the first degree, the wolf the second, etc. The candidate must pray and make offerings of tobacco that the spirits should drive the malevolent spirits away from the opening and that the entrance to the degree might be open to him. Serpent spirits were the evil manitous who opposed progress, but if the prayers and feasts were sufficient the largest serpent raised his body so as to form an arch so that the candidate might pass on his way while the four smaller serpents moved to either side of the path. In the second degree the candidate personated the bear spirit and was identified with the totem. 7. There were also myths concerning the "journey of the soul" among certain tribes. These were very significant, and yet were connected with the totem system.

Illustrations of these different kinds of myths might be given, but we shall content ourselves with a few of the pictographs which have been preserved, and the interpretations of them which have been furnished.

Schoolcraft has spoken of some of the totems of the Dakotas, and has given a plate which is quite significant. On this we see, first, four "gods of the water," represented under the figure of animals (3, 4, 5 and 6) with lightning darting from their heads, with the principal god near them (7). In the picture the circle represents the sea which surrounds the earth. It has four passages (11) across it, representing the doors through which the gods go out into the world. The dotted line shows the migration route. Another pictograph shows the god of the forest, under the figure of an owl (12) perched upon a tree; at the foot of the tree is the home of the "god;" on either side of him are the eagle and hawk (14), which are his guards or sentinels. One of the gods of thunder (15) is also represented, which is an enemy of the god of the forest. Another pictograph represents the six gods of the thunder, with thunderbolts in one hand and the rain falling from the other. The gods have square heads, with four points or peaks above the square to represent the four quarters of the sky. Another picture represents the "goddess of war," with battle-ax in one hand and four

rings on the arms. Above the figure is an arch representing the sky. These were the mythologic totems of the Dakotas. Those of the Iroquois can be seen on the "bark records."

An interpretation of certain mythologic totems has also been given by Catlin. There were four articles of great veneration and importance. These were four sacks of water made from a buffalo's skin, sewed together in the form of a large tortoise. These four tortoises contained water from the four quarters of the world. Their principal actors were eight men, with the entire skins of buffalos thrown over their backs, the horns, hoofs and tails remaining on their bodies in a horizontal position, enabling them to imitate the action of the buffalo, whilst they were looking out of its eyes as through a masque. The bodies of these men were chiefly naked, and all painted in the most extraordinary manner with the nicest adherence to exact similarity, their limbs, bodies and faces being in every part covered either with black, red or white paint. Each one of these strange characters had also a lock of buffalo's hair tied around his ankles—in his right hand a rattle, and a slender white rod or staff six feet long, in the other, and carried on his back a bunch of green willow boughs about the usual size of a bundle of straw. These eight men being divided into four pairs, took their positions on the four different sides of the curb or big canoe, representing thereby the four cardinal points; and between each group of them, with the back turned to the big canoe, was another figure, engaged in the same dance, keeping step with them, with a similar staff or wand in one hand and a rattle in the other, and (being four in number) answering again to the four cardinal points. The bodies of these four young men were chiefly naked, with no other dress upon them than a beautiful kilt around the waist made of eagle quills and ermine, and very splendid head-dresses made of the same materials. Two of these figures were painted entirely black, with pounded charcoal and grease, whom they called the "firmament, or night;" and the numerous white spots which were dotted all over their bodies they called "stars." The other two were painted from head to foot as red as vermilion could make them. These, they said, represented the day, and the white streaks which were painted up and down over their bodies, "ghosts which the morning rays were chasing away."

III. This leads us to take up the classification of the totems. It will be understood that there were several kind

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<sup>1</sup> The plate representing these may be seen in another part of this volume.

of totems, all of which are suggestive of mythology, or at least of religious customs and superstitions. The following embraces nearly all classes and a description of the offices which they filled: First. The clan totem. This was generally received from the mother, though in the tribes that had reached the patriarchal age, it was received from the father.<sup>1</sup> Second. The tribal totem, common to all the members of a tribe to the exclusion of other tribes. Third. The individual totem, belonging to an individual and not passing to his descendants. Fourth. The village totem, common to all the residents of the village, generally derived from the chief of the village. Fifth. The phratry totem, common to all the members of a phratry or sub-division of a tribe, and derived from some former tribal division. Sixth. The sub-gens totem, called by Fraser the split totem. Seventh. The mythologic<sup>2</sup> totem.

(1) "The clan totem was revered by a body of men and women who called themselves by the name of the totem, believed themselves to be of one blood, descendants of a common ancestor, bound together by common obligations to each other and by a common faith in the totem."

The clansman is in the habit of assimilating himself to his totem by dressing in the skin or other part of the totem animal, arranging his hair and mutilating his body so as to resemble the totem, or representing the totem on his body by tattooing or paint. The belief was common among the Indians that they had an animal in their bodies. A clansman affixes a totem mark or signature to treaties and deeds, and paints and carves it on his weapons, canoes and tents. In death the clansman sought to become one with his totem, so he was buried with the clan and had the clan totem placed above his grave.<sup>3</sup> It was an article of faith that the clan sprang from a totem or animal ancestor and that each clan at death rejoined the ancestors, though whether they reassumed the animal shape is a question.

Clan totems were prevalent among all the hunter tribes, and were the symbols or emblems of the clans or gentes which existed among them. They indicated a natural kinship and in a sense perpetuated the ancestral line exactly as the coat of arms in European countries perpetuates the family history and shows the ancestry of the peculiar household. They were not, however, indicative of any individual exploits as the crests and symbols upon the family crests in ordinary heraldy were, but were strictly genealogical. There were symbols

<sup>1</sup> It was about the only totem which was transmitted by inheritance. All other totems ended with the individual or with the village, though the mythologic totem was transmitted by tradition from generation to generation, and gradually extended to other tribes. There was a sub-gens or totem sometimes called the split totem.

<sup>2</sup> The myth of the "rabbit" as a "dawn god," contending with the brother is found among the eastern tribes, Algonquin, Iroquois, Dakota, and some of the tribes of the northwest. It reminds us of the Egyptian and Semitic story of the rabbit and the hare who watch for the rising of the sun.

<sup>3</sup> It was believed that there were four souls to every individual. One of these hovered near the body and gained access to it, another perpetuated the personal existence among the animal ancestors. A third entered the spirit world as the result of the initiation, at the end of the crooked path. The fourth was indefinite, intangible, something like our ghost.



which were reminders of the individual exploits but these were generally worn upon the person and constituted a part of his dress so that the warrior carried his personal history in his dress and personal ornamentations.<sup>1</sup>

(2) The tribal totem is very conspicuous, but it is sometimes difficult to distinguish it from other totems. The following, however, will aid us in this: The clan totem is generally local, and can be identified with the symbols which are held in common with the clans. The dream totem is regarded as sacred, and is known only to the individual. The phratry totem is best known to the members of the phratry, which is an especial brotherhood among the tribes, but the tribal totem is distinctively



MYTHOLOGIC TOTEM FROM ARIZONA.

of the entire tribe, and may be seen throughout the habitations which the tribe fills. The following will illustrate this distinction:

The Creek Indians were divided into twenty clans, all bearing animal names. The panther clan was prohibited from marrying a panther or a wildcat clan. The panther and wildcat clans formed together a phratry. The Choctaws were divided into two phratries each of which consisted of four clans. The Cayu have two phratries of eight clans. The Moquis had ten phratries and twenty-three totem clans. The Thlinkets divided into two clans, the raven and the wolf. One thing is noticeable about the naming of the clans. The most of them are named after animals which are numerous in the region where

<sup>1</sup> The symbols which were used to indicate the Gentile descent or kinship, were the shape of animals and showed that there was a superstition among the Indians which virtually introduced a kinship between the human beings and the animals with which they were familiar, and upon which they subsisted. The totem then was based upon imaginary ancestry and was a sign of the artificial brotherhood. This artificial brotherhood was a remarkable invention. All the members of a totem fraternity regarded each other as kinsmen and brothers. The totem bond is a stronger bond than the bond of blood or family. The sacredness of the new kinship may be shown by the laws of marriage, for persons of the same totem may not marry or have intercourse with each other. This was exogamy. In some tribes the prohibition extended to only a man's own totem clan. He could marry a woman of any totem but his own. In other tribes the prohibition extended to several clans. An exogamous group of clans within a tribe was called a phratry.

lived, or the clan habitat. The clans on the northwest coast bear the names of wolf, bear, eagle, whale, shark, hawk, sea lion, owl, salmon. Those of New York State bear the names of bear, wolf, turtle, heron and hawk; in the Gulf States, tortoise, wildcat, fish, alligator. Those of Arizona have the names of plants, while the Navajoes have the names of mountains, rivers, and a few animal names. Mr. Fraser speaks of split totems. This is only indicative of a division of a clan which had a common name. It was very common among the Omahas, as there were two or three clans<sup>1</sup> which had the same name for its totem, one called the black shoulder and the other the hanga.

3) There were "dream" totems. These belonged to individuals and did not pass to his descendants. They were regarded as very sacred and were not often revealed. These individual totems were carried in a bag, called the "medicine bag."<sup>2</sup> It might be made of the skin of an animal, and contained various charms, such as precious stones and the bones of birds and animals. It was sometimes worn as an appendage to the wardrobe, sometimes hidden under the dress and was difficult to be found. This "dream" totem is often identical with the initiatory totem, though there is generally something worn about the person which would be indicative of his dream, so that his totemistic kindred could easily recognize him.

The dress of a chief was made up generally of leggings, moccasins, headdress, necklace, shield, bow, quiver, lance,<sup>3</sup> tobacco sack, pipe, robe, belt, medicine bag, each one of which was covered with symbols which were suggestive of the tribe or clan to which he belonged, also, of the society to which he was initiated and especially of the exploits of which he boasted, but the medicine bag was generally emblematic of the animal which appeared in his dreams.

4) There were also mythologic totems. These have not been generally recognized, yet they are important, for they perpetuate the "foundation" myths of each tribe, and remind of the amount of mythologic literature which prevailed. They were in fact myth-bearers. They perpetuate the history and genealogy of the tribe. These mythologic totems are widespread, though it is sometimes difficult to distinguish

<sup>1</sup> The clan totem is used in the "winter counts" or tribal lists. "Winter counts" constitute a sort of record of the tribe or clan as they give the prominent events which occurred in a sort of picture writing. The Ogalala roster, obtained of Rev. S. D. Man, contains the picture of different individuals with their totem placed over the left, their tattooing or painting on their faces, the pipes and weapons in their hands, various parts of the dress help to identify the persons as much as if their names had been written. The pictorial census prepared under the direction of Cloud, chief of the Dakotas, also contains the totems of the persons who held precedence to him as a chief. See Mallory's Picture Writings —

<sup>2</sup> Miss Alice Fletcher says: "These religious symbols are the most sacred personal possessions. They are rarely inherited, being generally buried with the person. In a case a man would inherit the sacred symbol of his progenitor and carry it with him in his personal bag." See Report of Peabody Museum, Vol. III., p. 290.

<sup>3</sup> An illustration of this has been given by Catlin in connection with the portrait of "Rushing Eagle," who carried on his spear, shield and headdress, emblems of his personal history.

them from the clan or tribal totems. As a general thing we may say that the mythologic totem belongs to a group of tribes, and is prominent among the myths and symbols of nearly all the tribes which inhabit a certain district, and



MYTHOLOGIC SYMBOLS OF THE CLIFF-DWELLERS.<sup>1</sup>

represents the being who is regarded as the great creator and progenitor of these tribes, as well as their culture hero and chief divinity.

There are many specimens of mythologic totems, some of them found among the Eastern tribes, others among the tribes of the Interior, such as the Pueblos, but they are more numerous

<sup>1</sup>These symbols were discovered by Mr. Lewis F. Gunckel in the valley of the Rio Grande and near the ancient cliff-dwellings.

among the tribes of the Northwest. Among the Eastern tribes, this "totem" was generally represented by the gigantic rabbit, who was in reality the "Dawn God," but was sometimes by the turtle, which was identical with the earth goddess. Among the tribes of the far West, the mythologic totem was represented by the coyote, who was the great divinity of the California Indians. Among the tribes of the Interior, it was represented by the various animals which were supposed to preside over the "six celestial spaces," such as the bear, wolf, mountain lion, panther, eagle and mole, though among some of the tribes it was the mysterious spider women. Among the mountain tribes, a being having the human form and human attributes, but adorned with ornaments borrowed from the mountains, was the mythologic totem, as well as creator. The tribes of the northwest coast took their mythologic totems from the animals of the sea or the forest near which they dwelt, such as the whale, the wolf and the raven, though they mingled these with their human ancestry.

Illustrations of these mythologic totems may be given from the various tribes. The Lenape or Delaware Indians were descended from their totems, the wolf, the turtle and the turkey. These were their clan totems because they were descended not from a common turtle but from the great original tortoise which bore the world on its back at the time of creation. The story was that, the whole earth was submerged and but a few persons survived. They had taken refuge on the back of a turtle, which had reached so great an age that his shell was mossy; the turtle swam to a place where a spot of dry land was found. There the people settled and re-peopled the land. This is a tale of reconstruction and has been supposed to refer to the deluge. It fitly represents the earth as land distinguished from water. The back of a turtle represents an island surrounded by water.

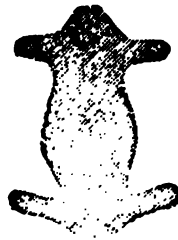
Sometimes the mythologic totems were taken from the localities in which the tribe had previously dwelt, but they relate to the time when they were created and can be carried back to the "creation myth." Such is the case with the Navajoes, who dwelt among the cliffs. The story is given by Dr. Washington Matthews:

"When the goddess Etsanetlehi went at the bidding of the sun, to live in the western ocean, and the divine brothers, the war gods, went to Thoyetli in the San Juan valley to dwell, Yolkai Etsan, the white shell woman, went alone into the San Juan mountains, and there she wandered around sadly for four days and four nights, constantly mourning her lonely condition, and thinking how people might be created to keep her company. On the morning of the fifth day the god Qustecyalci came to see her along with several other gods. These, after many ceremonies, created a human pair out of two ears of corn. The wind god gave to these the breath of life, the god of the white crystal gave them their minds, the grasshoppers gave them their voices. From these are descended the gens called the 'House of the Dark Cliffs' because the gods brought from these houses the corn from which the first pair was made."

Another version of the same story is as follows:

"The goddess of the west became the wife of the sun, but she determined to make something of the human kind to keep her company. From her left side she made four persons who became the progenitors of one gens Qonagani; from her right side four, from whom came the gens of Kiaa'ni. In like manner, from her left breast she made the four ancestors of the gens of Co'eiteini; from the right breast the ancestors of Bica'ni; from the middle of her chest the ancestors Qackligni, and from the middle of her back between the shoulders, the ancestors of Bicani."—See Am. Folk-Lore, Vol. 3, No. 9, p. 95.

The Haidas believe that long ago the raven took a cockle shell from the beach and married it. The cockle gave birth to a female child and from their union the Indians were produced. The California Indians, in whose mythology the coyote is a leading personage, are descended from coyotes. At first they walked on all fours, then they began to have some members of the human body—one finger, one toe, one eye; then two fingers, two toes.



FROG.



TURTLE.

#### CLAN FORMS IN THE EFFIGIES.

and so on until they became perfect human beings. The Iroquois are descended from a turtle which developed into a man, though their chief divinity was a rabbit. Some of the tribes of Peru were descended from eagles, others from condors. The snake clan among the Moquis are descended from a woman who was married to a snake she saw in a fountain and who gave birth to snakes, though the great mother of the Moquis is brought from the west nine clans in the form of deer, sand, water, beavers, hares, tobacco plants and seed grass. She planted them on the spot where their village now stands and transformed them on the spot into men who built the present Pueblos. The crane clan of the Ojibwas are descended from a pair of cranes which, after long wanderings, settled on the rapid at the outlet of Lake Superior. The Osages who descended from a snail, the snail bursting its shell, developed into a fine large man who married a beautiful maid.

IV. This leads us to consider the different methods of representing the totems. These were varied and numerous, but we may mention the following as the most important:—  
(1) The habit of painting the totems on the tents and houses.

The method of dramatizing the totems in the sacred ceremonies, especially those which took place at the time of initiating the braves into the secret societies; (3) the custom of carving the totem on the grave posts and genealogical trees; (4) the method of writing them in the bark records or verbal lists of names; (5) the custom of erecting effigies near the villages and placing totem posts near the houses in the



TOTEMS OF THE VILLAGE CHIEF.

ages; (6) the habit of inscribing animal figures on rocks; (7) the habit of representing them on their copper plates, in pottery and pipes; (8) the habit of inscribing animal figures on shell gorgets and burying them in the graves with the dead—the latter custom showing that there was a totemistic relation between the spirit of the dead and the supernatural world; (9) the custom of wearing masks as a means of transformation.

Illustrations of these different methods are numerous, a few of which are given in the cuts and plates. One of these represents the buffalo dance

one among the Mandans. Another represents the animal figures seen by Catlin painted upon the tents. Another represents the pottery vessel found in Arizona, made in the shape of a nondescript creature, partly animal and partly human. Another represents the "effigies" which are common in Wisconsin, another the "rock inscriptions" found near the cliff-dwellings. Still another represents the totems gathered about the bed of a Haida chief, as he lay in state in his tent.

Mr. Catlin, the celebrated painter, has given several pictures of these dances as celebrated among the Mandans. They illustrate the point, for in these dances the Indians are represented as assuming the attitudes of the different animals.

In some of these dances, the attitudes of the animals whose totems were worn by the clans were imitated, and the spirits of the animals were supposed to have taken possession of the dancers. In the buffalo dance, the people imitated the various attitudes of the buffalo. In the wolf dance, the society of those who had supernatural communication with wolves were the dancers. They wore wolf skins, and paint the tips of their noses and their bodies, in imitation of the blue wolves, and dance in imitation of the actions of the wolves. In the grizzly bear dance, they pretend to be grizzly bears. Some wear the skins of grizzly bears, pushing their fingers in the claws, some wear necklaces of grizzly bear's claws. The ghost dance was one in which those who had supernatural communication with ghosts could partake. The sun dance has not been practiced by the Omahas, but is very common among the Ponkas.

Catlin also speaks of wearing masks. He says one of the chief medicine men placed over his body the entire skin of a bear, with the war eagle's quill over his head, taking the lead in the dance, and looking through the skin which formed a masque which hung over his face. Many others in the dance wore masques on their faces, made of the skin from the bear's head; and all, with the motions of their hands, closely imitated the movements of that animal, some representing its motion when running, and others the peculiar attitude and hanging of the paws, when it is sitting up on its hind feet and looking out for the approach of an enemy. This grotesque and amusing masquerade oftentimes is continued at intervals for several days.

Illustrations of other methods of representing totems may be given from the various tribes.

We take the Omahas first, for the totems of this tribe have been studied extensively. Mr. J. O. Dorsy is our authority. The Omahas were a branch of the great Siouan stock which at an ancient date journeyed down the Ohio river and scattered over the region west of the Mississippi. The Omahas, Ponkas, Osages and Kansas went up the Missouri river. The Winnebagos, Iowas, Ottobas and Missouris belong to the same stock, though these tribes were scattered along the Mississippi river from the Wisconsin to the St. Francis river. The Omaha tribal organization was different from that of many other tribes. The kinship seems to determine the position of the men. Three classes were recognized in civil affairs: the chief, who exercised legislative, executive and judicial functions; second, the braves who were servants and messengers of the chiefs; third,

the young men and common people. The chiefs only had a voice in the tribal assembly, but in this assembly the civil and religious affairs were not separated. Besides the chiefs proper were the seven keepers of the pipe of peace and the three keepers of the sacred tents. The tribal circle of the Omahas was in the form of a horse-shoe. In this circle the gentes took their regular places divided by the road which passed through the center of the circle, five gentes on the right side and five on the left. There were special areas for the gentes and subgentes. The three sacred tents were pitched within the circle on the right side, the war tent was near the gateway of the circle. The pipes were distributed among the different gentes, the eagles. The following are the names of the gentes and their location, symbols, offices, special missions and characteristics: (a) The elk had their tent pitched at the right side of the gateway at one of the horns of the circle, the sacred tent consecrated to war and the sacred bag which held the feathers and skin of the sacred bird or war eagle, also the tribal war pipe and the tobacco pouch and the sacred clam shell, which was the emblem of the divinity which led the people in their migrations. This clam shell was in ancient days carried on the back of a youth, wrapped in a buffalo hide. It was never placed on the ground but was hung on a cedar stick when the tribe were encamped. Their mission was to give the alarm in case of attack and to hold the sacred pipe toward the sky when the first thunder was heard in the spring and to worship the thunder god. They were not permitted to touch or eat any of the flesh of the elk. Sacred names were given to the boys, names taken from different parts of the horns of the elk. The style of wearing the hair was in imitation of the elk's horns; the hair near the forehead stood erect, that back of it was brushed forward. (b) The black shoulder gens was next to that of the elk. Their ancestors, the "inke saba," were buffaloes, and dwelt under the surface of the water. When they came out of the water they snuffed at the four winds and prayed to them. They were accustomed to wrap their dead in a buffalo robe with the hair out, and also to decorate the outside of their tent with a circle in which was painted a buffalo head, and above it a pipe ornamented with eagle feathers. The style of wearing the hair with the boys was to leave two tufts to imitate the horns of the buffalo and a fringe all around the head and to shave the rest of the head. They could not eat the buffalo tongues and were not allowed to touch a buffalo head. There is a myth connected with this custom. One day a principal man was fasting and praying to the sun god, when he saw the ghost of a buffalo rising out of a spring. (c) Next to this was the Hanga gens, which means ancestral. They were called the clear sky makers, and the myth is that they also were buffaloes and dwelt beneath the water, but they used to move along with their heads bowed and their eyes closed, but when they came out of the water they lifted their heads and saw the blue sky for the first time. The sacred pole and two sacred tents belonged to this gens. The decoration of the tents was a cornstalk on each side of the entrance and one at the back of the tent. Within one of the sacred tents was the skin of a white buffalo cow. The style of wearing the hair was to imitate the

<sup>1</sup>The Omahas once dwelt near St. Louis, but accompanied by the Ponkas and the Iowas they migrated in stages through Missouri, Iowa and Minnesota, till they reached the neighborhood of the Red Pipestone quarry. This must have taken many years, as their course was marked by a succession of villages consisting of earth lodges.



back of the buffalo, a crest of hair about two inches long extending from ear to ear. (d) The fourth place in the tribal circle belonged to the black bear recently called the Katadah gens. The tent was decorated at the top with a circle painted blue to represent the bear's cave. Below this four zigzag lines to represent different kinds of thunders; below this the prints of bear's paws. The style of wearing the hair was to leave four short blocks on the head. A subgens is called "the blackbird people." Their style of wearing the hair is to leave a little hair in front for bill and some at the back of the head for the tail and a block over each ear for the wings. Another subgens called the turtle, cut off all the hair from a boy's head except six blocks, two on each side, one over the forehead and one down the back. The Kansas gens was next in the circle. They were the wind people. They flap their blankets to start a breeze which would drive off mosquitos. Next to the Kansas are the earth lodge makers, Man-cin-ka-gaxe, though they call themselves the wolf people. They carried sacred stones, black, red, yellow, blue, which were the same colors as those of the lightning on the tent of the bear gens. The boys have two blocks of hair left on their heads, one over their foreheads and another on the crown, perhaps to imitate the head and tail of a wolf.

The next is the buffalo tail gens. They wear their hair in a ridge, which stretches from the front to the back of the head, perhaps to imitate a buffalo's back. They cannot touch a buffalo head. Next to this were the deer head gens. They cannot touch any deer skin, or even use moccasins or the fat of a deer, but can eat the flesh of the deer. The keepers of the sacred pipe were a little apart from the rest. There was a ceremony at birth, in which a child's back was marked with red spots in imitation of a fawn, and all the deer head people make spots on their chest about the size of a hand. The next in the circle was the Ingce-jide. They do not eat a buffalo calf, but paint the body of a buffalo calf on each side the entrance to their tents. The Ictasanda gens, the reptile people, were next in the circle. They do not touch worms, snakes, toads, frogs, or any other kind of reptiles. The children were taken to the man who filled the sacred pipes, who would cut off one lock about the length of a finger, and tie it up and put it in a sacred buffalo hide. He would then put the little moccasins on the child, who was to wear them for the first time, turn him around four times, and then say to him, "May your feet rest for a long time on the ground."

We see from this description that the totem system was a very important factor in the clan life of the Omahas. It not only gave the name of animals to the clans, but made the flesh of those animals sacred, or taboo to the clans. It also controlled the position of the tents of each clan, and even the decoration and a part of the furnishing of the tents. It came into the tent and directed the ceremonies at the birth of children, placed its mark upon the body of the child. The cutting of the hair of the child was totemistic, symbolical of the peculiarities of the clan totem. The duty and mission of the clan leaders was to carry the sacred pipes in their tents. This was totemistic.

MIGRATION OF OTHER ALGONQUIN TRIBES—AND  
OTHER STOCKS.

BY CYRUS THOMAS.—FIFTH PAPER.

It is probable that the Siouan migrations from the original home north of the lake preceded that of the Algonquins. That the Winnebagos preceded the Chippewas into the region west of Lake Michigan will doubtless be conceded by all those who believe they came by way of the eastern end of Lake Superior. Even Lewis H. Morgan, whose theory, so far as it relates to the population east of the Rocky Mountains depends on eastward movements, admits that when the Chippewas first became known to the whites, they were advancing westward from the Sault St. Marie. That the Chippewa migration from the north, took place before that of the Lenape, and perhaps in connection with the Ottawa, may be assumed as probable. This would place the Siouan migration in advance of that of the Algonquins. This would be true even on the supposition that the Siouan tribes came around the west end of Lake Superior. If the explanation of the Lenape legend which has been given be accepted, we may assume as very probable that all of the Algonquins south of the lakes found their way south through the upper and lower Michigan peninsulas, that is, across the Straits of Michilimackinac and St. Mary's River.

The Chippewas, Pottawattamies, Illinois tribes, and apparently the Miamis moved westward through, or into the region now embraced in upper Michigan, and the State of Wisconsin. That some of these tribes preceded the Chippewas, and even the Ottawas, or were developed from a migrating horde which preceded them, is indicated by their relative positions when they first became known to Europeans, and by the faint echoes of apparently old traditions. The Ottawas and Chippewas are said to still have a tradition that on first arriving at Mackinaw they found the country occupied by the Mushkodaineng (Mascoutins) who were defeated by the invading tribes in the course of a long war, but these appear to have gone south through the southern peninsula, as the tradition adds that they finally retired along the shore of Lake Michigan toward the southern part of the Michigan peninsula. These northern tribes represent the Mushkodaineng as superior to themselves in several respects, and attribute to them the bone deposits about Mackinaw and the ancient garden beds further south. The earliest French missionaries

heard of the Mascoutins as a powerful tribe in southern Michigan, with whom the Neutrals and Ottawas were constantly at war. This agrees with the Ottawa tradition. When the French explorers entered Wisconsin they found the Mascoutins living in the central and southern parts of the State, in close connection with the Miamis and Kickapoos. Hence it would seem that they had been driven from Michigan, as were also the Sacs and Foxes, and associated with the tribes which had passed westward into Wisconsin. It is possible that some of these tribes were those encountered by the Lenape about the southern end of Lake Michigan.

The Pottawattami, who seem to have been developed from the same stem as the Ottawas and Chippewas, and probably preceded the latter into Wisconsin. According to the traditions of these three tribes, they were originally one people. The history of the tribes included under the name "Illinois" indicates pretty clearly that they belonged to the stream which flowed into Wisconsin.

The Lenape, Shawnees, Sacs and Foxes, and probably some other tribes, were connected with, preceded or followed in the wake of the traditional movement, passing through the lower peninsula. As before stated, it is probable that there was a disintegration of the migrating body while the central home was yet in the lower peninsula, one portion, which contained the Shawnees, going to the southwest. It seems from the mound evidence that this tribe, or a portion thereof, pushed as far to the southwest as southern Illinois; while it is probable, judging by the legend, that another portion or possibly all assisted the brethren in their war with the Talega. After remaining for a time in southern Ohio, they moved southward to Cumberland river. It is stated in the fifth canto, which relates to the history of the tribes subsequent to the war with the Talega:

"Little Cloud was chief: many departed,  
The Nanticokes and the Shawnees going to the south."

It does not follow that the departure of these two tribes was from the same locality or at precisely the same time. That some of the latter were still lingering in the vicinity of the Ohio river when La Salle was preparing for his journey down the Mississippi, appears to be pretty well established. It is more than probable that Judge C. C. Baldwin was right in identifying the Tonawonga (a people met with on the Upper Ohio) with this tribe. They (the Shawnees) possessed a vague migration myth, according to which, at some remote period of the past, they had arrived at the main land after crossing a wide water. Their ancestors succeeded in passing this by means of the magic art of their priests or medicine men, who enabled them to walk over the water as though it had been land. That this is an echo of the Walur-

**O**lum is evident, a fact which tends to confirm the theory herein advanced, regarding the relation of this tribe to the Lenape during the migration. The tradition attributed to some of the western Algonquin tribes that their original home was north of the St. Lawrence, near or below where Montreal stands, is another instance of modern geographical modification of an old myth. The same myth as originally given does not name the St. Lawrence or Montreal. Modern geographic names must be excluded from all acceptable myths,—the interpretation may fix the locality by such names, but they should be dropped out of the formal statement of the myth.

**I**t is most likely that the Nanticokes did not separate from the eastward moving body until it had crossed the Alleghany mountains, though it is possible that it was on the west side and that they moved for a short distance down the Ohio before turning eastward.

**T**he prehistoric movements of the Iroquoians, except those of the southern tribes already mentioned, are buried so deeply in the obscurity of the past as to be apparently beyond the reach of any rays of light that modern research can throw upon them. That the entire family except the Cherokees, resided in former times north of the St. Lawrence, appears to be satisfactorily shown. The weight of evidence, as heretofore indicated, leans toward the conclusion that the Iroquoian group preceded the Algonquins in the occupancy of the eastern region. Did they come from the northwest? If the arguments advanced in regard to the movements of the Siouan and Algonquian tribes are deemed satisfactory, it would seem to be more reasonable to assume that the general course of their movements had been in the same direction, than to suppose they were an exception to the rule. Moreover, if the place of their meeting with the Lenape was at the west end of Lake Erie, as has been assumed, this would indicate that the Hurons, at least, were at this early period immediately east of Detroit river.

**S**ir Daniel Wilson believed the primal seat of this family was the shore northeast of the mouth of the St. Lawrence. This was based upon a tradition that they formerly dwelt by the side of the sea. But this might as well apply to the shore of Hudson's Bay as to the shore of the Gulf of St. Lawrence. This dim remembrance of having dwelt by the side of the sea would naturally have been transferred by them after long residence on the St. Lawrence and a knowledge of the ocean, to its shore. It is significant that Brownell, whom he quotes, says, "Some fanciful tales of a supernatural origin from the heart of a mountain; a migration to the eastern seaboard; and of a subsequent return to the country of the lakes and rivers, where they finally settled, comprise most that is noticeable in the native traditions of the Six Nations prior to the grand confederation." This will

features in which the types of these two districts are marked as to indicate relationship or contact of the tribes. The supposition that this tribe parted from the main body north of Lake Huron and moved southwest to the Mississippi and being pressed here by incoming hordes, probably of Siouan stock, would furnish an explanation. Unfortunately the data upon which this theory must be based are not of a positive character which has as yet caused them to be generally accepted. We must therefore leave the question of the migrations of the Cherokees uncertain.

Although there are traditions in regard to the migrations of the Muskoki tribes, we learn but little therefrom except from the general belief that they come from some place in the west. At this point there are no dissenting views; but from what region in the west, is an unanswered question. That the other tribes of the Gulf States had long resided in the region when first encountered by Europeans, is indicated by the numerous monuments scattered over the south, which, as the evidence shows, are attributable to these aborigines. According to Gatschet, *wahali*, the Hitchiti word for "south" (which is to be the same as the Creek term *wahali*), signified "down stream." This would seem to imply that it was adopted from the course of the Mississippi and the river of that stream. It is not probable that a term with this meaning would have been adopted for "south" while residing on the banks of the Mississippi.

A notion has prevailed to a considerable extent that the mounds and earthworks of the principal earthworks of Ohio and Kentucky were the work of the Indians of the Gulf States, who came south and were incorporated into the tribes of the Gulf States or were the ancestor of these tribes. A careful study of the Ohio works, their mode of construction and their contents, do not confirm this theory; in fact, the evidence they furnish

ther stocks, which we have mentioned, in the occupancy of the istrict may be considered as evident. Whether they moved outhward on the east side of the Mississippi or west of it cannot be decided; however, the weight of evidence and authorities appears to be in favor of the west side.

Perhaps we are not advancing too far into the field of conjecture in assuming with Morgan a possible relation of some kind, at a very distant date, between the Muskoki tribes and some of the Siouan branches. This writer's remarks on this point in his paper on "Indian Migrations" are as follows:

"The Mandan, as used by the chiefs in formal addresses, is a clear, sonorous language, with quantity and accent strongly defined; but it is disfigured with scraping and guttural sounds. It could not have attained its degree of advancement without a long and prosperous national career. This dialect is in closer affiliation with those of the lower Missouri nations than with the Dakota proper; at the same time, judging from a comparison of vocables, it resembles the latter more closely than the latter does the Missouri dialects, thus giving to the Mandans an intermediate position. The Minnitarees and Crows who are subdivisions of an original nation, seem to form a connecting link between the Dakota and Missouri nations on the one hand and the gulf nations, namely, the Creeks, Choctas, Seminoles, etc., on the other. In their dialects they must be classed with the former, but in their system of consanguinity with the latter. There is a concurrence, in one striking feature, of their respective systems of relationship, which is found in their systems alone, and which seems to require a connection by blood for its explanation. It has elsewhere been stated as probable that the Minnitarees carried agriculture to the Upper Missouri and taught it to the Mandans and Arickarees, and that they were emigrants from the south. The remembrance of this migration seems still to be preserved in their national name, *E-nat sa*, signifying the people who came from afar."

It is a singular fact that Mr. Gatschet, without having any reference to this supposition, remarks as follows in his work on the "Migration Legend of the Creeks:"

One of the most ancient features of an Indian language is reduplication for inflectional purposes. In this we observe a thorough difference between Maskoki and the languages west of the Mississippi river. In Maskoki, the second syllable is the reduplicated one in adjectives and verbs; west of the river at least in Tonica, Atakapa, and Tonkawe, it is the first one. Linguists able to appreciate this circumstance fully, will not deny that it is of great weight in separating certain classes of linguistic families from each other, and consequently to assign them different areas in primordial epochs. The Sahaptin and the Dakotah excepted, no other linguistic family of North America is

known to me which reduplicates for inflectional (not for derivational) purposes in the same manner as Maskoki."

These, it is true, are but slight pointers, nevertheless, as they drop into place with the other indications, we are justified in adopting this supposition until some sufficient reason for abandoning it is presented.

It may not be out of place to add here that Morgan and some other writers have indicated a belief that the Iroquoian and Siouan stocks were offshoots at a very different date from the same stem. The former writer says:

"It will be noticed that these nations are classed as a sixth branch of the Dakotan stock. There are strong reasons for assigning to them this position. Notwithstanding the general conclusion that the Hodenosaunian speech is a distinct stock language, a comparison of its several dialects with those of the Dakotan nations shows that if the words do not reach the point of clear identification, they have, nevertheless, a strong family likeness so plainly marked as to arrest attention, whilst corresponding words from Algonkin dialects are in striking contrast. Their respective systems of relationship are more nearly identical in minute details than those which belong to independent stocks. Among the Wyandotes there is a tradition that the Dakotas were derived from them, which is equivalent to a tradition of common descent. They still recognize each others as *brothers*, which is a recognition of blood relationship when applied by one Indian nation to another. There is some evidence to the same effect in the common name applied by the Algonkin nations to the Iroquois and to the Dakotas. It gains importance from the fact that the Algonkin and Dakotan nations have confronted each other during the centuries of their occupation of conterminous areas, and have been mutual witnesses of each other's subdivision and changes of location. The Great Lake nations call the Iroquois *Na-do-wag*, which signifies marauders. It has a primary meaning equivalent to enemy, but it was applied to the Iroquois, as a specific national name, by the Algonquin nations. It was also their name for the Hurons, although the latter, while residing upon Lake Huron, were in alliance with the Ojibwas and Ottawas, and made common cause with them against the Iroquois. It is still applied to the Wyandotes. Moreover, the name Nottawas, given to a small nation of the same lineage, in Virginia who called themselves Che-ro-ha-ka, confirms the view that this term was a generic one among the Algonquins for this particular stock."

To what extent this view has been confirmed or disproved by more recent investigations the writer is unable to state, as little bearing directly on the point has since been published.

It would seem from what has been presented that the pre-historic migrations of the different tribes, so far as they can be traced

with reasonable certainty, point to an area of differentiation north of Lake Superior. If the theory that the Eskimo formerly lived about the southern shore of Hudson's Bay be adopted, we would find in the conclusion we have reached, an explanation of their migration thence to the northern and eastern coasts of the continent. This would have to be based upon the supposition that this hardy, northern people preceded the other Indians in the movement from the extreme northwest; that having gathered about the southern end of the Bay, they sent forward colonies to the eastern coast; spread southward, and were driven back toward the north by pressure of the hordes which followed and made their way eastward. This supposition, so far as can be seen, agrees with all the known data bearing on the question, and points to Behring Strait or some point in that region as the place where the ancestors of the Indians of the Atlantic section reached the continent.

There is another fact which appears to have some bearing on the question of the general course of migration in this section. This is the distribution of copper as revealed by mound explorations. Although the writer is inclined to believe that more of the copper found in mounds was derived from foreign sources than is generally supposed, it is nevertheless certain that the larger portion was obtained from the mines of the Lake Superior region. Numerous specimens from this source have been found in all parts of the mound area, even to the extreme east and southeast. It is true that the use of this metal would, soon after its discovery, travel back along the line, though the migration was westward; yet its early distribution, as shown by its presence in its oldest mounds, would indicate a long acquaintance with the source of supply. And this acquaintance would have been much earlier if the migration was from the northwest than if it had been from the east. If the tribes in the northwest came from the east, the movement would have been northwestward, and, after the discovery of the copper mines of the Lake Superior region, the knowledge of it and the custom of using it would have been carried onward by the migrating tribes. It appears, however, that precisely the contrary is the fact. We learn from "Notes on the Western Dené" by Rev. A. G. Maurice, who has been for many years a missionary to that people and is well acquainted with their customs and traditions, although they made some use of copper in prehistoric times, it appears from their traditions that it was brought from the northwestern coast.

Rev. E. Petitot (*Rapport succinct sur la Géologie des vallées de l'Athabaskan*) says: "Before the arrival of Europeans in the valley of the Mackenzie, the 'Yellow-knives' and the 'Dog-ribs' were acquainted with the use of the native copper, which they found on the borders of the Copper-mine river. Of this they manufactured knives, from which they received their name.



They made use at the same time of polished stone. Therefore we have here the contemporaneity of polished stone and bronze. The 'Hares' (Peaux-de-Lievre), on their part, who were ignorant of the use of copper and did not give themselves the trouble to polish their instruments of stone, had discovered the length of the Mackenzie to the mouth of the river L'e ota-la delin." It appears from these facts that the copper used by these northwestern tribes was not brought from the Lake Superior mines, but from other more northern and western sources. How far northwest Lake Superior copper is found in mounds is unknown to the writer. It is at any rate reasonable to suppose it was in use among the Crees, but not among any tribe north and west of them. If this be correct, it is a fact having an important bearing on the questions relating to the trend of the general migrations. It indicates that these migrations were south and east, instead of northwest.

Another fact which has a strong bearing on the questions relating to the migrations of the Siouan tribes, which has not been mentioned, is that the northwestern tribes of the family, or at least most of them, did not cultivate the soil, did not rely upon agriculture for any portion of their subsistence. In fact, when first encountered by the whites, cultivated no corn. If they had resided in the Ohio valley before going to the northwest, unless previous to the cultivation of this cereal in the southern section, they would undoubtedly have acquired the custom and carried it with them. There is, however, no one, it is presumed, who will contend that this movement was at such an early date as to precede the cultivation of this cereal. It is not likely they would have left this region, which is one of the most attractive in the Atlantic section, except under strong pressure from other tribes.

## THE SIGN OF THE CROSS.

BY LADY COOK.

The Sign of the Cross is the most universal and the least generally understood of all the mystic symbols that have come down to us through the lapse of infinite ages. We are accustomed to identify it with Christ and Christianity alone, as though it had originated with them. Yet ten thousand proofs exist that it was simply appropriated to these just as it had previously been claimed by every great religious cult that made its appearance in the world. A distinguished writer, in his essay in the *Edinburgh Review*, nearly thirty years ago, on "The Pre-Christian Cross," says: "From the dawn of organized Paganism in the eastern world, to the final establishment of Christianity in the western, the Cross was undoubtedly one of the commonest and most sacred of symbolical monuments, and, to a remarkable extent, it is so still in almost every land where that of Calvary is unrecognized or unknown. Apart from any distinctions of social or intellectual superiority of caste, colour, nationality, or location in either hemisphere, it appears to have been the aboriginal possession of every people in antiquity; the elastic girdle, so to say, which embraced the most widely separated heathen communities; the most significant token of a universal brotherhood; the principal point of contact in every system of pagan mythology. That mighty maze, but not without a plan, to which all the families of mankind were severally and irresistably drawn, and by which their common descent was emphatically expressed, or by means of which each and all preserved, amid every vicissitude of fortune, a knowledge of the primeval happiness and dignity of their species. Where authentic history is silent on the subject, the material relics of the past and long since forgotten races are not wanting to confirm and strengthen this superstition. Diversified forms of the symbol are delineated more or less artistically, according to the progress achieved in civilization at the period, on the ruined walls of temples and palaces, on natural rocks and sepulchral galleries, on the hoariest monoliths and the rudest statuary; on coins, medals and vases of every description; and in not a few instances, are preserved in the architectural proportions of subterranean structures, of tumuli as well as fane. The extraordinary sancity attaching to the symbol, in every age and under every variety of circumstance, justified any expenditure incurred in its fabrication or embellishment; hence the most persistent labour, the most consummate ingenuity were lavished upon it."

What then was the original meaning of this symbol, or symbols, which has been the warp into which all the threads of every religion have been woven? In order to solve this question, a multitude of facts are to be considered, all pointing to the same conclusion, no matter how grossly exhibited or how mystically disguised.

It is the sign of generation whether divine or human, the emblem of the ever-vigorous fecundity of nature, and therefore, of the life that is and that which is to come. It denotes the universal vivifying power, sometimes associated with the most obscene rites, at others refined into a spiritual regeneration, and thus typifying a future immortality and a state of never-ending bliss. It was consequently adapted to all sorts and conditions of men, and became as universal as life itself. One of the earliest complete types known is the *crux ansata* formed like a T, with an oval or circlet resting upon it. Singly they typify the male and female organs of reproduction; together they may denote goodness, hope, felicity, or the life to come. The *crux ansata* is commonly found sculptured on Egyptian and Coptic monuments, and the mystical Tau symbolized "the hidden wisdom" of the Chaldeans, of the ancient Egyptians, Indians, Peruvians, Americans, and of every ancient people in both hemispheres. Humboldt found in remote Kamschatka the cross and other rude remains of hieroglyphics, similar to those of Egypt. It was engraven on the glass statue of Serapis, on the walls and tombs of Kings. Planted on the frustum of a cone the simple T represents goodness; springing from a heart or on the breast of a mummy, it denotes hope or expectation of reward. The two colossal statues from Easter Island may be seen at the British Museum, and on the back of each the same sign is rudely engraved.

As with this which was the conventional, so with the ovoid, or circle, sometimes called the egg or the eye. It denoted the female principle, and covered the vestments of the Ephesian Diana, and the Assyrian Mylitta, in whose temple all the women were bound to prostitute themselves to strangers. The robes of the dark-skinned mother goddess of India was similarly adorned, as were the tails of Juno's birds which drew her chariot through the heavens. We are told that the worship of Juno was universal, that the Empire of Jupiter was small compared to her's. As Ilytha, sometimes called her daughter, she was the goddess of birth in Arcadia, was Isis in Egypt, and Juno Lucina of the Latins. Ilytha was also the same as Diana, Venus Lubentia, and Genetillis, who arose from the sea. Juno was not only queen of heaven, presiding over marriage and child-birth, the patron of sexual virtue, and punisher of lewdness in matrons, but was also the goddess of power and empire, and the dispenser of riches.

In like manner Venus among her various titles was surnamed Telessigama, because she presided over marriage, and Phallo-meda, from her affection for the phallus.

The ovoid form of the upper member of the crux ansata was sometimes displayed as a handle, as in the Theban catacombs and on a Babylonian cylinder. On a stele from Khorsabad, an eagle-headed man holds the circle in his right hand, and the tau in his left. In the ophite hieroglyphs which remind of an era of wide-spread serpent worship, it is depicted as a pennate circle, and as a circle is borne in the claws of the flying Scarabeus, the sacred emblem of Pthah, and is found sculptured from Europe to Mexico.

In a modified form and joined with the tau it is the oldest ensign of majesty in India, and is "commonly found in the hands of Brahma, Vishnu, and Siva." In Christian Europe it is adopted by every potentate, including our Queen, as a symbol of royalty," whose coronation orb surmounted by a pectoral cross is nothing more than the embodiment of the traditional crux ansata.

The Rev. William Haslam, in his work, "The Cross and the Serpent," gives a curious and fanciful explanation of these facts. He says: "I have suggested that the Cross was conceived when the redemption of man was designed. I cannot doubt that it was revealed with the prophecies."

"It was in prophecy, as it is now, an outward sign of an inward mystery, *connected with a promise*. It was the sign and pledge of that promise, and as such, in whatever sense the outward observer regarded it, there seems little doubt but that to the initiated it was a holy and blessed sign of hope in a fallen age, and a pledge of the promise of light in a period of darkness." In another passage he waxes still bolder: "The Cross was known to Noah before the Dispersion, and even before the Flood; and I will venture yet further, and say the Cross was known to Adam; and that the knowledge as a sacred sign was imparted to him by the Almighty."

We may admire the enthusiasm which suggests all this, and which is eminently theological and clerical, but unfortunately the patriarchs and prophets never once referred to the Sign of the Cross, and the Hebrew and Samaritan Scriptures are equally silent. They were, however, thoroughly familiar with it, as it formed in their days a significant part of all Pagan worship.

Of all its many forms, "There is not one among them," says the Edinburgh reviewer, "the existence of which may not be traced to the remotest antiquity," and we might add, nor the causes of whose variance cannot also be traced. The Maltese Cross—the battle-ax of Thor, originally four huge phalli carved out of the solid rock, but afterward metamorphosed by the virtuous knights of St. John, or the Cross of St. George which

marks the English flag, and every other, is nothing more or less than a Phallic symbol. Rude, upright stones, especially those of a conical form, appear to have been the earliest objects of worship by mankind, and their assistance by contact to produce fruitfulness is still invoked by women in many parts of the world. In every mythology the cone was the emblem of the mother of heaven, whatsoever her name, and every altar and high place of hers was originally conical or pyramidal. One stone standing upon another, or inserted in the earth, represented a rude cross. The mystical tree, "the tree of life," was also represented in the form of a cross, or by the hieratic sign of the deity across the stem. Every circumstance pertaining to this was peculiarly phallic. When serpent worship began to supersede tree worship, the ophite emblems were of a similar nature. The serpent with its tail in its mouth has the same significance as the crux ansata. When, at a later stage of civilization, the worship of the moon and sun successively prevailed, and the followers of the sun made war upon those of the "Great Dragon," many of the old emblems were devoutly adopted, and a composite religion was formed.

And when in the fullness of time, Christianity made its appearance and developed orders and hierarchies, it incorporated within itself almost every feature of Paganism, including the supreme Phallic symbol, the Cross. Erotic Christianity worships the Divine Child, adores Mary His mother, and practically gives the Supreme Deity an inferior place. Christ's wounds are dwelt upon in almost every hymn with perfervid ecstasy, and the Cross of Calvary is the foundation of faith and hope. At all points our religion is lineally descended from the older and most ancient. We have our Tree of Life, our Sun of Righteousness (uprightness), our Cross of Salvation, and the hope of an after life. We have also a bitter aversion to the "old serpent" and "all his works," although we retain many of the latter in our rights and ceremonies. The cardinal points of superstition have varied, and mankind have boxed its compass, so that at length they seem returning to their old love: the religion of Humanity and the worship of Nature.

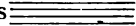
# RUINS AND PICTURE WRITINGS IN THE CAÑONS OF THE McELMO AND HOVENWEEP.

BY LEWIS W. GUNCKEL.

The region about the junction of the McElmo and Hovenweep creeks is especially prolific in ruins of prehistoric man. In a radius of some three miles, we find the remains of pueblos or valley ruins, cliff houses and towers, rock shelters; fortified plateaus, large groups of interesting picture writings; a deep cave penetrating far below the surface of the bounding territory showing unmistakable evidences of human habitation; and a plateau containing rectangular graves marked by upright stone slabs and circles of stone-henge on a small scale. This locality was superficially described in a former paper by the writer while in the field in 1892 with the party under the able leadership of Mr. Warren K. Moorehead. I have added to my former description a number of additional notes and sketches which may be of interest. The ruins described here are all situated near the border of Utah and Colorado, which crosses the valley at this point one of the most imposing ruins in this locality is situated at one mile east of the junction of the McElmo and Hovenweep creeks. It is a huge cave or rock shelter under an immense boulder upon and on top of which is placed a lookout tower, built of neatly trimmed rocks of stone. One side of the tower underneath the tower is literally covered with picture writings and signs, among which could be distinguished the human form, deer, goats, lizards, snakes, bears, turkeys and many other birds and animals, while intermingled with these are others which seem to have had some significant meaning to the ancient sculptor but which is unknown to us. Although it seems impossible to read these rock inscriptions, or even to conjecture to any extent their significance, yet they certainly have a meaning and represent some idea or event in the past history of these people. They are valuable nevertheless if only as showing the stage of civilization which was reached by these tribes. That they were of the same age as the dwellers is very probable for we have found them in many dwellings and rock shelters, having sketched as many as twenty different sets in this neighborhood. This group of pictographs, and also the tower above it was mentioned by Mr. W. Jackson<sup>1</sup> in his exploration some sixteen years before, but

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<sup>1</sup>A Notice of the Ancient Ruins in Arizona and Utah lying about the Rio San Juan" H. Jackson. Page 28.

the tower was in a poorer state of preservation than described it, and perhaps many of the stone blocks have and gradually fallen down. The most significant thing about this inscription is the unusual size, for it covers about sixty or seventy-five square feet. Another point is that this huge inscription seems to be read in lines containing four parallel lines as follows:  dividing part of the mass of figures into four parallel rows. I had some trouble to make a complete sketch of this inscription, but fortunately it cannot be reproduced here on account of space. I present in Plate I. a group of pictographs taken from a set of sketches of the various inscriptions in this region. One of these can be found besides the animal and human figures mentioned above, the signs shown in Plate I. Nos. 7, 8, 10, 12 and 39 and other important forms. There is a large rock shelter in this locality containing an inscription of great importance. Its exact location as near as we can find is as follows: About one hundred yards west of the mouth of the creek, and about one mile east of the junction of the McElmo and the McElmo Creeks, the elevation being about 100 feet above the river level. The shelter is about ten feet high and eleven feet deep. Unfortunately it was impossible to get to the inscriptions on account of their peculiar position on the sloping rocks. In every case the figures were carved on the sloping rock on the under side where they were protected from erosion and weathering. This shelter is made by a sandstone boulder weighing many hundred tons, which has weathered out underneath making a natural shelter from the inclemency of the weather. I have not the space in this volume to mention the many signs and forms which are cut into the rock—one of great importance however was a large Swastika cross measuring six by five inches. I took the care to have Mr. Cowen, our surveyor, and our artist, to witness and vouch for my correct finding. Besides this sign, others of curious shape and form are these inscriptions. These rock shelters are found very commonly in this immediate locality and in a few hours an observer can count no less than fifty of them, all of which show unmistakable signs of ancient human habitation. Charcoal, roofs and sides blackened by fire, rock sculptures and pictographs. Some are more elaborate and are enclosed by long walls of stone in the form of a circle, semi circle or square. They are of especial interest to the student, and will repay examination and no doubt many interesting facts will be brought to light in the future. In a former article in this volume I described the numerous picture writings found in this locality. Some of the forms found in these inscriptions are seen in Plate I. Nos. 13, 14, 15, 40, 43, 45, 46, 50 and

30, 31, 34 and 35 are from rockshelters along the McElmo Creek. I have placed a few others in this group for the sake of comparison. Number 16 was found near a cliff house in Allen, Utah. Number 17 can be seen on the walls of Gibraltar in Butler's Wash, Utah. Numbers 18, 20 and 28 are on the walls of Cold Spring Cave in Butler's Wash, Utah. Numbers 19, 21, 22 and 26 are on the walls of Casa del Echo, on the river San Juan, Utah, and numbers 23, 25 and 27, were found near cliff houses along the San Juan River near Bluff, Utah.

In the valley about a half mile from the two above mentioned places, is found a large pueblo or valley ruin. It is in such a ruined condition that the rooms and walls cannot be described accurately. The centre or court had no rooms or buildings in it and the whole structure had evidently had only one story, as the accumulation of stone and debris at the highest parts is only five feet high, and at the lowest, two feet high. It is triangular (?) in shape and about one-hundred feet long and eighty-five feet wide.

Situated at the junction of the McElmo and Hovenweep creeks, is an interesting double walled tower, containing one inside circular room, and the outer circle subdivided into six partitions stands about one-hundred feet above the junction and about two hundred feet from the water. The walls have mostly fallen down, but it yet stands about six feet high with the sides strewn with fallen rocks. The whole diameter measures thirty five feet, and the double walls are five and one foot apart. The exact purpose of this peculiar shape is difficult to determine.

Directly adjacent to the north and west of this tower is a series of walls and ruined buildings, the whole covering approximately two acres. It is placed on the top of a promontory and flanked and protected on all sides by a series of low walls. The walls and buildings have fallen down to such an extent that it is impossible to make a correct map of the whole. The important feature of the ruins is that it wholly surrounds an opening to a deep cave, which is again protected by a series of walls entirely surrounding it. This can go down slantingly to the river below, which is fully one hundred and fifty feet distant, and seventy five feet below the level of the mouth of the cave. If these ancient inhabitants were able to obtain water by means of this cave during times of warfare, we can judge the estimable value of it to them, and the importance of a fortified promontory where they could also obtain a fresh water supply. No one can, without visiting this region, realize the extreme scarcity of water at certain seasons of the year. I present an illustration showing the mouth of the cave in Fig.—and design of the interior in Fig.—. The cave is of natural origin



and probably caused originally by the water washing down through the cracks in the sandstone ledge from the top of the mesa to the river, but was afterwards utilized by the ancient people as a passage way to water. The entrance at the mouth of cave is so hidden by the ruined walls which protected it, that one passing by would hardly notice it. It is seldom indeed that one finds a cave of such a depth in the midst of ruins in this locality. It was the only one we found or ever heard of and for this reason we were especially interested in it. After some considerable trouble and risk we were able to descend almost to its end, which was filled up with debris. Fragments of pottery were found at different points in the cave. Directly above the cave is a ruin containing eight or nine rooms.<sup>1</sup>

## ETHNOLOGICAL NOTES.

### THE HOUSES OF THE ESKIMOS.

The exhaustive report on the work of the Danish expedition to East Greenland (1891-92), led by Lieutenant C. Ryder, fills Vols. xvii, xviii and xix of the *Meddelelser om Grønland*, published at Copenhagen, last year. The results are summarized in *Petermanns Mitteilungen* (pp. 86-95, No. 4, 1897), with a geological map of Scoresby Sound on a scale of 1:1,500,000. The chief purpose of the expedition was to survey the unknown coast between Scoresby Sound and Angmagsalik, to the south, where Holm found, in 1884, in about 65° 40' N. Lat., the most northern Eskimo settlements on the east coast. Ryder was not able to map this unsurveyed coast line, but his very complete scientific studies in the Scoresby Sound region, his headquarters for nearly a year, entitle his researches to a place among the important Greenland explorations. Scoresby Sound is over 300 miles north of the nearest east coast settlements, but the Eskimos formerly lived much further north on that coast, and Ryder made a careful study of the ample evidence of their former residence in Scoresby Sound. He found many house ruins, graves, kitchen-middens, etc., particularly on Cape Stewart South Cape in Northwest Fiord, Reindeer Cape in West Fiord and Denmark Island. He found the ruins of fifty winter houses in seven different locations, numerous tent rings, formed of large stones laid in a circle, marking the places of the summer tents, and the remains of dog sledges, bows and arrows, traps, harpoons and other food-catching implements. The natives lived essentially in the same way as those of Angmagsalik and the west coast at the present day, except that the

<sup>1</sup> The cuts designed to illustrate this article will be given in the next number along with an article on the Human Hand, by the same author.—ED.



Roulet

HOUSES OF THE ESKIMOS.

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small houses were intended for only one family, while the winter dwellings south of their former abode are built for several families. They were not so advanced as the Angmagsalik natives are in the art of making and adorning their various manufactures. Ryder believes that they did not die out, but removed further south, and were the ancestors of the existing east coast natives. This view is supported by the fact that nearly all the objects found had evidently been worn out or broken and thrown away as useless. He believes the period when Scoresby Sound was inhabited may date several centuries back, and his observations tend to strengthen the theory that these natives were probably derived directly from North American Eskimos who crossed the archipelago and North Greenland to reach the east coast. The fashioning of their implements seems identical with that of the Point Barrow Eskimos, and they appear to have been more closely connected with the north-western branch of the family than with the central Eskimos of West Greenland.

Rev. J. G. Wood says: In a country where the thermometer remains many degrees below zero, for many months together, and in which ice and snow are the prevailing features, it is evident that houses can not be built after the fashion of those in most countries. No trees can grow there, so that wooden houses are out of the question. There is only one substance, of which houses can be made, that is frozen water, either in the form of snow or ice. The snow houses, called igloos, are made in a dome-like shape and are built with a rapidity that is perfectly astonishing.

Our surprise was great, when after creeping through some long passages of snow, we found ourselves in a cluster of dome-shaped edifices. There were five clusters of huts. Some having one, some two, and others three domes, in which thirteen families lived, each occupying a dome or one side of it according to their strength. The whole number of people were 21 men, 25 women, 18 children, making a total of 64. The entrance to the building was a hole about a yard in diameter, which led through a low arched passage of sufficient breadth for two to pass in a stooping posture, and about 16 feet in length. Another hole then presented itself, and led through a similarly shaped but shorter passage, having at its termination a round opening about two feet across. Up this hole we crept and found ourselves in a dome about 7 feet in height and as many in diameter, from which the three dwelling places with arched roofs were entered. Each dwelling averaged from 14 to 16 feet in diameter, and 6 or 7 in height. There two families occupied a dome; a seat was raised on each side two feet in height. These raised places were used as beds. They were covered in the first place with pieces of whale-bone and pieces

of seal skin. Over these were spread deer pelts and deer skin clothes. The pelts were used as blankets, so many of them had ornamental fringes sewed around their edges. Each dwelling is illuminated by a broad piece of transparent ice, which forms a part of the roof and is placed over the door. In the middle of the hut is erected a slight scaffold which supports a rudely made net, and under the net is placed the one piece of essential furniture of the house, the lamp. Over the lamp is hung the cooking pot, the size of each being proportioned to the rank of the possessor.

#### THE NAGA TRIBES OF NORTHEAST INDIA

have many customs which resemble those of the wild tribes of America. They have hill-villages, defenses, stockades and look-outs. Their houses are sometimes built in regular streets and placed on poles with a raised floor of bamboo, and steps leading up to it. The men and women are tattooed, the men on their chests and the women on their legs and breasts. The unit of society is the clan or khel. The village is a group of many khels. No man is allowed to marry in his own khel. They are supposed to be the descendants of a common ancestor. As to their religion, they imagine that there are many good and evil spirits residing in their hills. To them they sacrifice animals and cows for one, dogs to another class, cocks and spirituous liquors to another. They ornament their houses with horns and concentric circles, which they place on the highest hills, every side stockaded by narrow sunken paths leading to the summit. They also cover the fronts of their houses with dolls, of wood or clay, dressed up as men and women. They are animistic rather than totemistic in their religion. Their real gods are the tree, mountain and forest. They have a cyclops god which is apparently not Indian.\*

#### PALEOLITHICS IN EGYPT.

Mr. H. W. Seton Karr, has shown at the Royal Institute of Great Britain, certain implements from the lost flint mines of Egypt, the workings of which are in the Eastern desert of Egypt thirty miles from the Nile, some of them on the face of the cliffs, others on the steppe like tiers or plateaus which descend from the high table top mountains. Most of the mines had a central work place. Prof. Petrie assigns an enormous interval of time to the types represented, namely from the Paleolithic age to Twelfth dynasty. Prof. Sayce does not agree with this, but considers the implements as all prehistoric. Mr. Allen Brown suggested that Mesolithic types were intermingled with those of the Paleolithic and Neolithic, pointing to the continuity of the existence of man in Egypt. This discovery

\* Miss Gertrude M. Godden, in the *Journal of the Anthropological Institute*.

old mines or quarries in Egypt is remarkable, for the tools with which the flint had been worked, were found as well as the flint relics themselves. Two plates are furnished with the article showing quartzite, spear heads, varying from five and one-half to seven and one-half inches in length, the other a flint ax seven and one-quarter inches in length, the only distinction between the two being the narrow end in one case is worked to make a sharp point, and in the other the broad end is worked so as to make a sharp blade with flanges. †

#### DIFFERENT KINDS OF TOMAHAWKS AND WAR CLUBS.

"The North American Indian had three great types of weapons, which were used either in the hand or at the end of the handle or thrown from the hand, and designed for bruising, for piercing and for cutting. The tomahawk is a handled weapon, which combines all three of these functions in one. The early weapons of this class were made of the antler, of which the long prong furnished the handle and the short prong the sharp point. Another form and perhaps stage, was marked



TOMAHAWKS AND WAR CLUBS.

by the tomahawk, which was simply a celt, with a grooved blade set into a handle, by one of the many ways in which the hafting was formerly done. In considering the great mass of so-called celts and grooved axes, it must be understood that while a portion of them were industrial tools with a savage artisan, many of them were a striking and cutting weapon attached to a handle, and to enable the warrior to do his work at a short distance. A most efficient form of the striking and cutting weapon, was the Mexican battle axe, consisting of a handle of wood along the edges of which sprawls of obsidian

and rugged stone were set. In some instances these chipped implements or blades were placed so close together as to suggest the first steps in the invention of the saber, which is a cutting weapon. The addition of the pipe to the pole of the tomahawk is

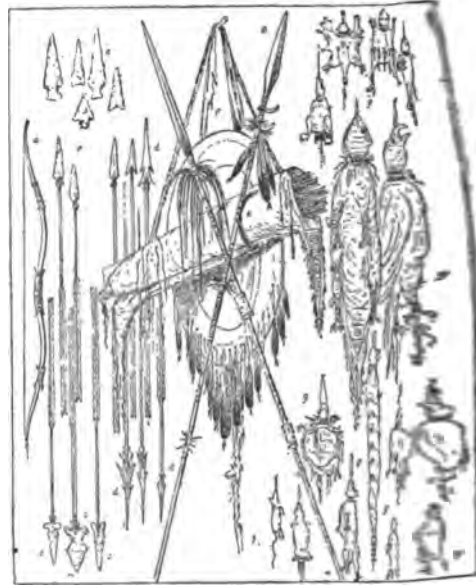
† *Journal of Anthropological Institute*, August, '97.

simply one of those transitions which all industrial instruments undergo in passing from the useful into the ceremonial and mythic condition. In aboriginal times the tomahawk had no pipe attachment." Confirmatory of this the following quotation from Charlevoix, will be appropriate. "Formerly the arms of the

Indians were the bow and arrow and javelin, both pointed with a kind of bone worked in different manners, and lastly the hatchet or break head. This was formerly a short club, the head of which was partly round and partly sharp-edged. Most had no defensive weapon, but when they attacked any entrenchment, they covered their whole body with small light boards. Some have a sort of cuirass or breastplate of small pliable rings very finely worked. They had also, formerly a kind of mail, made for the thighs and arms of the same materials. The Western Indians always used bucklers of buffalo hides, which are

are very light and proof against musket shot. They have a kind of standard of colors, to know each other by, and to enable them to rally. These are small pieces of bark cut into round form, which they fix to the head of a pole, and on which is drawn the mark of their nation or village. If the party is numerous, each family or tribe has its peculiar ensigns with distinguishing mark. These arms are also adorned with different figures, and sometimes with the mark of the chief.<sup>1</sup>

The transition from the wood and stone to the iron tomahawks, took place after the advent of the white man. There are two classes. So far as the record of these instruments goes the broad edged hatchet-like tomahawks were first sold to the Indians by the English and Dutch, while those with the pointed edge came through the Spaniards and French. The blade of this tomahawk is that of a pipe, and is bent at right angles so to work with a blow rather than a thrust. Some of the Siouxa tribes, of later days, inserted heavy spikes or blades of butch-



ARROWS, BOWS AND SHIELDS.

<sup>1</sup> See Charlevoix, Vol. I, pp. 338.

Knives which do their work after the manner of the Mexican axe.

Rev. J. G. Wood, says: "The clubs are short, seldom exceeding a yard in length, mostly eight or nine inches shorter. They are almost invariably made upon one or other of two models, examples of which are seen in the illustrations. The primitive idea of a club is evidently derived from a stick with a knob at the end, and that is the form which is most 'in vogue.'"<sup>2</sup> In the common kind of the club the whole of the weapon is quite plain, but in many specimens the native has imbedded a piece of bone or a spike of iron in the ballor bulb at the end of the club, and has decorated the handle with feathers, bits of cloth, scalps and other ornaments. The second kind of club is shaped something like the stock of a gun, and has always a spike projecting from the angle. In most cases this spike is nothing more than a pointed piece of iron or the head of aspear, but in some highly valued weapons, a very broad steel blade is employed, its edges lying parallel with the length of the weapon. Such a club as this is often decorated with hundreds of brass headed nails driven into it, so as to form patterns, and besides is ornamentedso profusely with strings and feathers and long trailing scalp locks, five or six feet in length, that the efficacy of the weapon must be seriously impeded by it."

These war clubs according to Catlin, were used not only by the Iroquois, but by all the tribes situated along the Great Lakes, including the Chippewas, the Blackfeet, the Sioux, and the Osages. The Shoshones, according to Lewis and Clark, used a different war club, and which consisted of a ball of stone covered and fastened to a wooden handle which was held to the wrist by a thong of hide, and was effective in crushing the skull but not in cutting.

This cut reproduced from one of Catlin's photos, shows the style of bow in use among the hunting Indians, such as the Sioux, Algonkins and Iroquois. It also shows three methods of fastening the stone arrow made to the feather trimmed shafts, as well as the style and shape of their lances to which they affixed the stone spear heads. The shield was their chief means of defense, though their medicine boys were supposed to have a peculiar charm in warding off danger and gaining them success.

#### CEREMONIAL DANCES.

The following selected from an old copy of the *Rocky Mountain Presbyterian*, illustrates the dances formerly common in the northwest coast:

When everything was prepared, dressed in a hunting-skirt, with face blackened and spear in hand, Tow-a-att appeared in the war-dance. Re-

<sup>2</sup> The club among the Fiji Islanders is made from the root of a tree and is elaborately carved, but frequently has the same shape as the war club of the American Indians. It is bent like the stock of a gun.



tiring with much applause, he re-appeared in the form of a wolf, and, with mask, rolling eyes and snapping teeth, gave the dance of the "invocation of the spirits for success in hunting." Then he put on a horrible mask to represent the devil, and with hideous rattles, gave the devil or Tamanamus dance. Then, with dress and mask, and large hat with tinkling bells on the rim and eider down in the crown (which down he showered around the room as blessings upon his guests), and rattles in his hands, he gave us the religious dance of the shamans, or medicine men.

### THE GRAECO-ROMAN BRANCH OF THE EGYPT EXPLORATION FUND.

A new and brilliant chapter in the history of exploration opens with the discovery, by Messrs. Grenfell and Hunt, of hundreds or thousands of papyri at the ruins of an important city of ancient Egypt. The manuscripts range in date from the first to the ninth centuries of our era, and appear to include a wide range of classical and Christian literature during a most interesting and too often obscure period, not only in the history of Egypt but that of her contemporaries. Who knows what "light" lurks in the dim pages, awaiting only the apt and profound knowledge of translators to beam forth for our illumination? The identification of the first chapter of St. Mathew, and the "Sayings of Christ," already widely circulated, clearly establish the inestimable value of such a discovery as this the latest, but one of the noblest yet made by this Society. Some of the papyri will prove to be personal, domestic, perhaps social and the like, in character and color; but that will be a history of the people rather than the "times," and it is now the wise fashion to write history much that way. Other papyri will treat of the financial, political, social status or problems of that ancient State matters of import may be included; diplomatic bits and governmental red tape may buttress the axiom of "nothing new under the sun"; and perhaps some autographic letters of the great will prove a prize to museums. Who can tell what decipherment of these dust-worn yet dust-kept manuscripts will reveal?

But to untold numbers the deepest interest in such a disclosure—in fact, a miniature Alexandrian Library—a papyral collection larger than all Europe possesses—is of a religious kind. And the nearer these manuscripts take us to the days when Christianity was on earth in human form, the more intense their value for every believer in Christianity. It is expected, too, that classical literature will be greatly enriched by these "fragments of prose and poetry."

Of what avail these treasures if untranslated, unpublished? Thanks to the inspiration of the Society's treasurer, Mr. Herbert A. Grueber, of the British Museum, the Committee determined to establish a new department of its work, and it is named THE GRAECC-ROMAN BRANCH, for the period covered includes Greek and Roman rule in Egypt. Its mission is to explore papyri and to publish the valuable portions of the papyri now in *id.* It is estimated that \$3000 a year will be required for its special work. This appeals, not to archaeologists and their supporters alone; it appeals to the educated and friends of education and the increase of knowledge, and to the churches. I told Rev. Dr. Philip S. Moxom to me, "There should be no difficulty in your raising the money needed for such a purpose." It is proposed to issue an annual volume of 300 quarto pages, with facsimiles of pages, etc., etc. All subscribers of less than \$5 a year will be entitled to receive this volume; \$5 will secure a life-membership, but I particularly call for patrons at \$25.

Will every reader of ANTIQUARIAN respond in some way to this earnest and wise appeal? If one cannot subscribe, he can send one of five to make a subscription; he can speak to others of this cause; he can (if in the pulpit or an editor) publicly commend it; he can use our circulars, always to be obtained. I am asked to make one of my "old-time appeals;" but the not the above *data* present in themselves an incontrovertible argument, far beyond my faint words, for a prompt, generous, continuous support of so noble a cause?

WM. C. WINSLOW, Vice Pres't.

525 BEACON STREET, BOSTON, Sept. 1, 1897.

### THE BRITISH ASSOCIATION.

The sixty-seventh annual meeting of the British Association was held in Toronto, August 18-25, 1897. The University buildings were placed at the disposal of the Association. A large and important contingent from the American Association was in attendance and heartily participated in the work of the various sessions. The address of the president, Sir John Evans, on the antiquity of Man, was interesting and suggestive. Regarding election to the post of President as a recognition by the Association of the value of Archaeology as a science, he proceeded to show the connection of Geology, Numismatics, Chemistry, Mineralogy, Petrology, and Palæontology to Archaeology, and in a comprehensive manner he discussed the evidences of the exist-

ence of man and his works during the Palæolithic period. The necessity of establishing a Bureau of Ethnology for Greater Britain was one of the numerous important topics referred to in this able address. It must be gratifying to Anthropologists to see one of their number occupying the Presidential chair of the Association.

The papers read in the section of Anthropology were comprehensive and interesting, as the programme will show. Reserving notes on the papers and discussions for another communication, I simply append the full programme of the section in which the readers of the AMERICAN ANTIQUARIAN are most particularly concerned:

*Miss Alice Fletcher*—Two papers—The Scalp-Lock: A Study of Omaha Ritual. The Import of the Totem among the Omaha.

*C. Hill Tout*—Sqaktquacht, or the Benign Faced, Oanne of the Utlakapamuq, British Columbia.

*R. N. Wilson*—Two papers—The Blackfoot Legend of Scar-Face. Blackfoot Sun-Offerings.

*Stansbury Hagar*—Star-Lore of the Micmacs of Nova Scotia.

*Dr. R. Munro*—The Lake Village of Glastonbury and its Place among the Lake-dwellings of Europe.

Report on the Silchester Excavations.

*F. T. Elworthy*—Some Old-World Harvest Customs.

Report on the North Dravidian and Kolarian Races of Central India.

The Address of the President of the Section, *Sir Wm. Turner*, on—Some Distinctive Characters of Human Structure.

*Prof. Anderson Stuart*—A Demonstration of the Utility of the Spinal Curves in Man.

*Prof. A. Macalister*—Two papers—The Causes of Brachycephaly. Notes on the Brains of Some Australian Natives.

*Dr. W. J. McGee*—On Some Uses of Trepanning in Early American Skulls.

Report on Mental and Physical Deviations in Children from the Normal.

Report on Anthropometric Measurements in Schools.

*Dr. Franz Boas*—The Growth of Toronto School Children.

*Prof. Lightner Witmer*—An Experimental Analysis of Certain Correlations of Mental and Physical Reactions.

*Dr. H. O. Forbes*—The Physical Characteristics of European Colonists Born in New Zealand.

Report of the Committee on the Northwestern Tribes of Canada.

*Dr. W. J. McGee*—The Seri Indians of the Gulf of California.

*C. Hill Tout*—Notes, Historical and Philological, on the Indians of British Columbia.

*Dr. A. F. Chamberlain*—Two papers—The Kootenays of British Columbia and Their Salishan Neighbors. Kootenay Indian Drawings.

- J. W. Mackay*—A Rock Inscription on Great Central Lake, Vancouver Islands.  
*Rev. J. Maclean, Ph. D.*—Blackfoot Womanhood.  
*E. Sidney Hartland*—On the Hut-Burial of the American Aborigines.  
 Report of the Ethnographic Survey of Canada.  
*B. Sulte*—The Origin of the French Canadians.  
 Report of the Ethnographic Survey of the United Kingdom.  
*Prof. A. C. Haddon*—The Evolution of the Cart and Irish Car.  
*Prof. F. W. Putnam*—The Jesup Expedition to the North Pacific.  
 Discussion of Evidences of American-Asiatic Contact.  
*George Iles*—Why Progress is in Leaps.  
*Prof. J. C. Ewart, M. D.*—Note on the Transmission of Acquired Characters.  
*Sir George Robertson*—The Kafirs of Kafirstan.  
*Prof. Dean C. Worcester*—The Mangyans and Tagbanuas of the Philippine Islands.  
 Report on the Necessity of the Immediate Investigation of the Anthropology of Oceanic Islands.  
 Joint Discussion with Section on Geology on The First Traces of Man in the New World.  
*Prof. F. W. Putnam*—The Trenton Gravels.  
*Prof. E. W. Claypole*—Human Relics in the Drift of Ohio.  
*Sir Wm. Turner*—Exhibition of Lance-headed Implements of Glass from North West Australia.  
*F. H. Cushing*—The Genesis of Implement Making.  
*Prof. A. C. Haddon*—Adze-making in the Andaman Islands.  
 The subjects included in this programme were listened to from day to day by large audiences, which were most numerous during the discussions and when illustrated by the powerful lanterns of the University.

JOHN MACLEAN.

NEPAWA, MAN., Canada.

## EDITORIAL.

### THE TWO MEETINGS OF THE AMERICAN ASSOCIATION AT DETROIT.

In the year 1875, the 30th Session of this Association was held in the city of Detroit. There were present at that time, a large number of prominent men of science, many of whom had been members from the beginning. Among them were such notabilities as, Col. Chas. Whittlesey, Prof. J. S. Newberry, Prof. Andrews, Principal Dawson, now Sir William, Rev. Dr. Daly-rimble, Dr. Morris, also a number of younger men, Prof. Edw. D. Cope, J. C. Riley, Prof. Tutthill, and Prof. E. G. Hilgard, near-

ly all of whom are gone, and will never meet with the Association again. At that time there was no section devoted to anthropology, but it became manifest that there was a demand for either a separate association devoted to this specialty, or a separate department connected with the American Association. The following year which was the year of the Centennial, the editor of this Journal in conjunction with a large number of gentlemen interested in the subject, had the honor of calling a Convention of Archaeologists, to be held in the Ohio building on the Centennial grounds. Immediately preceding this, the American Association met at Buffalo, at which time Section H was established, Maj. J. F. Powell and J. W. Putnam being very prominent in the organization.

Since that year great progress has been made in all departments, especially in Archaeology.

The Bureau of Ethnology, the Archaeological Institute of America, located at Boston, the Archaeological Department of the University of Pennsylvania have been established during the interval. Nearly all the Museums, at Washington, New York, Philadelphia, Boston, Cambridge, Davenport, St. Louis, and Nashville, have received great accessions, the Field Columbian Museum, the Haskell Museum, Fairbanks Museum and the Walker Museum, and others have been established. During this interval of 22 years, no less than five Archaeological Journals have been established, viz: The American Antiquarian, the pioneer of all; the American Journal of Archaeology, the Journal of American Folk-Lore, the Anthropologist, besides two or three that have had a short history.

At the former meeting there were interesting exhibits from the Davenport Academy of perforated skulls and copper relics, presented by Dr. Farquharson, and the recent finds, by Dr. E. I. Gilman, on the skulls at the River Rouge, and Mr. Bela Hubbard on the "Garden Beds" gave an interest to the locality near Detroit. None of these features were brought up or alluded to in the meeting of 1897, as there was entirely new range of topics, the progress of the Science having brought the entire content into view. It was significant also that the address of the Vice-President W. J. McGee, was upon the subject of Classification of Science especially as related to Anthropology, and the claim was made, that this stands at the head of all the Sciences and the crowning work belongs to it. The address was a masterly production, and received many favorable comments both from the visitors and the Fellows of the Association.

The large attendance upon the sessions of Section H showed the popular interest taken in the subject, and the applause given to the most able papers, showed that the interest was intelligent and discriminating. Space will not permit a review of all the articles. It is but fair to say that three of the best papers

were prepared by ladies who are fellows of the Association, viz.: Miss Alice C. Fletcher, Mrs. Anita N. McGee and Miss Zelia C. Nuttall, that by Miss Fletcher being a very valuable contribution on the topic of "The Import of the Totem."

Two papers by the editor of this Journal were read, one upon the coincidences between the Archaeology of Western, Europe and Eastern America, as possible signs of contact. Another upon the Serpent Symbol in the Mississippi Valley and in Nicaragua compared.

Other papers were on the following subjects:

"Prehistoric Implements from Charlevoix, Mich.," H. P. Parmelee; "An Archeologic Map of Ohio," Warren K. Morehead; "Micmac Mortuary Customs," Dr. Stanberry Hagar; "The Jesup Expedition and the Asiatic-American Problem," Prof. F. W. Putnam; "The Tagbanuas of the Phillipines," Prof. Dean C. Worcester; "The Mangyan of the Phillipines," Prof. Dean C. Worcester; "The Significance of John Elliot's Natick," Wm. Wallace Tooker; "Anthropologic Work of New York State Pathological Institute," Dr. A. Hrdlicka; "The Ethnologic Arrangement of Archeologic Material," Harlan I. Smith; "Popular Anthropology in Museums," Halan I. Smith.

The most notable event was the discussion of the so-called "Paleolithic Finds in the Trenton gravels."

The names of those who took part in the discussion and the titles of their papers, were as follows: "General Review," by F. W. Putnam; "On the Implement Bearing Sand Deposits at Trenton, N. J.," B. G. N. Knapp; "Implement Bearing Sand Deposits at Trenton, N. J.," by H. B. Kummel; "Discussion of the Relics From the Sand Deposits on the Lalor Farm," by Prof. G. F. Wright; "Archeological Researches in the Trenton Gravels," by Prof. W. H. Holmes; "Report of an Examination of the Trenches Dug on the Lalor farm, July 25-29," by Henry C. Mercer; "Investigation in the Land Deposits of the Lalor Field," by Prof. Thomas Wilson; "Geologic Age of the Relic Bearing Deposits at Trenton, N. J.," by Prof. R. D. Salisbury.

Secretary Putnam spoke for nearly an hour, giving a general review of the history of the whole subject of the discoveries in the sands, and clayey deposits of Delaware, of stone implements, chipped stone, indicating the agency of man prior to the coming of the red race. He also gave a comprehensive review of the statements made by Dr. Abbott in 1883, of the finding of supposed palaeolithic implements in the glacial gravel. Then he reviewed the various opinions that were expressed and the discussions that ensued following the statements made by Dr. Abbott, of his work in this field for various museums, of the expense connected with the excavations,

which was borne largely by private contributions, naming several men, among them Clarence B. Moore, the noted archeologist of Philadelphia, and the Duke of Lubat, the latter bearing the entire expense of last year's work.

He also showed a chart in colors, drawn to one-half scale illustrating the three red clayey bands which alternated with the bands of sand. He then stated that while thoroughly convinced himself that the conclusion drawn by Dr. Abbott in 1883 that the argillite implements found in this sand and clayey deposits were, as a whole, the handiwork of a people who existed at a time preceding the late Indian, and who occupied the bluffs of the Delaware valley, he had planned to give all archaeologists and geologists who cared to visit the region, an opportunity to make a personal investigation themselves. Several parties came in response to the invitations he issued, and they directed the digging of a number of trenches on the Lalor farm. Chipped stones were found by them in the sand and clayey formations, and at the same depth as were found by him, and he closed by saying that it was for these geologists to decide the age of that sand and clay deposit and demonstrate whether or not people existed prior to the red men.

Prof. G. F. Wright, in his paper on the subject, held that the formation of clay indicated glaciation, thus attesting to the great antiquity of the find. Prof. Thomas Wilson also supported that theory, while Prof. W. H. Holmes, in an exhaustive argument, held that the implements indicated simply the beginning of the Indian in that region. He thought the sand was piled up by the action of the winds. He did not touch on the presence of the clay, and when the session closed the question was still open: "Did man exist on this continent prior to the coming of the red man?"

In the discussion that followed, Prof. T. C. Chamberlin, of Chicago, and Prof. Gilbert, of the U. S. Geological Survey, and several other distinguished scientists took part, each taking the ground that the gravel was not preglacial. "It was an admirable discussion in every way," said Dr. Robert Munro, of the University of Edinburgh, Scotland, "and I was intensely interested in it. It was one of the best things I have ever listened to. I particularly admired the spirit in which it was carried on and the method pursued. There was not a speaker who did not appear to be talking with the firmest conviction that he was speaking the truth."

The conclusion, however, reached by most of those present who listened to the discussion, that the various "finds" made by Dr. Abbott in 1883 and subsequent years, which

were claimed by him to be paleolithic implements, have no particular value as proving the presence of glacial man or even of the paleolithic age, for the universal testimony of the geologists was that the gravels were not glacial deposits. Furthermore, the archæologists were of the opinion that the relics themselves were very unsatisfactory evidences of the presence of a paleolithic age or culture, especially as the little piece of slate found below the ferruginous sand was totally unlike any paleolithic relic heretofore found, and there was an entire absence of the bones of extinct animals.

The effort was made by Prof. Putnam to show that there was an intermediate period, betokened by the argillitic relics; but this was controverted by Mr. W. H. Holmes, whose opinion was that the argillite relics are deposits from the Indian villages, which had worked down by degrees into the gravel by means of land-slides, upturning of trees and other natural causes, the two leaving this part of the subject an open question.

There were about twenty foreign visitors present. Among them Prof. Vernon Harcourt, of Oxford University; Prof. H. P. Truell, of Dublin University; Dr. Robert Munro, of the University of Edinburgh, the author of "Lake Dwellings" and "Problems in Anthropology."

The officers for the next meeting, which will be held in Boston, were elected by general acclamation as follows: President, Prof. F. W. Putnam; General Secretary, Prof. —. Howard, of Washington.

#### SURVIVAL OF TOTEMISM.

Animal figures were common among the early nations of Europe, and may have come from a primitive totemism. It is said that the Danes had animal figures painted upon their banners when they invaded England. The Norsemen carried shields with animal semblances inscribed upon them, and the Sea Kings navigated the Northern Ocean in boats, the prow of which was made in the shape of an animal, the serpent or dragon being the most common form. They placed their shields upon the sides of the boats, perhaps to represent the scales. The Chinese bear, to this day, a dragon flag, as the emblem to their national power, and carve its head upon the corners of the roof of their houses. The Japanese take the stork as their favorite ornament or emblem, while the Coreans place the tiger on their national escutcheon. Siam has the white elephant, and the people of Benares, the common elephant, for their "coat of arms."

The ancient nations used animal figures as symbols of power. They are seen upon their coins and upon their seals, and are always significant.



There are animal-headed divinities in Egypt, Assyria and India, which remind us of the totems of America, the connecting link being found in the grotesque figures described by Bartram as being common among the Muscogeans and other tribes formerly inhabiting the Gulf States. He says, in describing the "council house" of the Cherokees:

There was a secluded place designed as a sanctuary, dedicated to religion, or rather priestcraft, for here are deposited all the sacred things, such as the "medicine pot" rattles, chaplets of deer's hoofs, and other apparatus of conjuration, and likewise the Calumet, the great "pipe of peace," the imperial standard, made of the tail-feathers of the white eagle, hugely formed and displayed like an open fan on a scepter or staff, as white and clean as possible when displayed for peace, but when for war the feathers were painted or tinged with vermillion. The pillars and walls of the houses of the square are decorated with various paintings and sculptures, which are supposed to be historic or legendary of political and sacerdotal affairs. They are extremely picturesque, but some are ludicrous, as men in a variety of attitudes have the head of some kind of animal, such as those of the duck, turkey, bear, fox, wolf, and deer; and again, those kinds of creatures are represented as having human heads. These designs are not illy executed, for the outlines are free, bold, and well proportioned. The pillars supporting the front, or piazza of the council house of the square are ingeniously formed in the likeness of vast speckled serpents<sup>1</sup> ascending upwards, the Atasses being of the snake family or tribe.

## NOTES ON BIBLICAL ARCHÆOLOGY.

### THE ROUTE OF THE EXODUS.

At a recent meeting of the Victoria Institute, in London, England, Major-General Tulloch, C. B., C. M. G., gave an account of that part of Egypt in which he lately carried out a British War Office survey, including that portion through which the route of the exodus was said to have lain. In describing the present state of the land, he pointed out that the conformation of the country had somewhat altered since that period, 3,400 years ago, but what especially came under his notice was the action of a gale of wind which had stopped all his survey work on the borders of Lake Menzaleh; in a few hours the east wind actually carried the waters of the lake beyond the horizon, leaving all sailing vessels resting on the bed of the lake. So unique an event was not recorded by any modern traveler, though in his paper on the "Route of the Exodus," read before the Victoria Institute, four years ago, M. Naville had pointed out that it was not an impossibility, for history had recorded that the wind had, in the past century, produced such a phenomenon at the Geneva end of the lake of

<sup>1</sup> These serpent pillars remind us of the serpent columns which have been described by W. H. Holmes as situated upon the summit of the pyramid, as found at Chi chen Itsa, in Yucatan, arranged so as to guard the entrance of the temple of the sun, situated upon the summit of the pyramid.

that name. An interesting discussion ensued ; and it was pointed out that, wherever the passage of the Israelites took place, yet the possibility of waters being influenced by wind to so great an extent was demonstrated.

The most interesting of recent discoveries in Egypt, the Logia Iesou, or "Sayings of Jesus," is that made a few weeks ago on the edge of the Libyan desert, 120 miles south of Cairo, in a series of low mounds on the site of the ancient capital of the Oxyrhynchite nome. Oxyrhynchus was a flourishing city in Roman times, and a number of Greek papyri have been discovered in its ruins, including the most sensational "find" of recent times in the reported "Sayings of Our Lord." The pamphlet, just issued by the Egypt exploration fund publishers, gives this account of the papyrus: "The document in question is a leaf from a papyrus book containing a collection of Logia, or 'Sayings of Our Lord,' of which some, though presenting several novel features, are familia, others are wholly new. It was found at the very beginning of our work. The town is a mound which produced a great number of papyri belonging to the first three centuries of our era, those in the immediate vicinity of our fragment belonging to the second and third centuries. This fact, together with the evidence of the handwriting, which has a characteristically Roman aspect, fixes with certainty 300 A. D. as the lowest limit for the date at which the papyrus was written. The general probabilities of the case, the presence of the usual contractions found in biblical manuscript, and the fact that the papyrus was in book, not roll, form, put the first century out of the question and make the first half of the second unlikely. The date therefore, probably falls within the period 150-300 A. D." The sayings are eight in number, but two are nearly illegible. The fragments have started what promises to be an endless discussion, and the editors suggest different ways of accounting for them.

#### LIBRARIES IN BABYLONIA.

Babylonia was the veritable China of the Oriental world ; it was a land where writing and reading had been practiced for unnumbered centuries, and from whence the elements of culture had been disseminated throughout Western Asia. Its cities contained libraries stored with clay books, and the exploring expeditions which have been sent from Europe and America, have made us acquainted with some of them. Two such libraries, which were formed before Abraham was born, have been discovered within the last half-dozen years; one of them by the French explorer, M. de Sarzec, at Tello in Southern Babylonia, the other, and the more important—though only fragments of it have been preserved—by Mr. Haynes, working in behalf of the University of Pennsylvania at Niffer, the ancient Nippur, in the northern part of the country.

#### DISCOVERIES IN ASIA MINOR.

The following from Prof. W. M. Ramsay, in the *Sunday School Times*, is important :

"The discoveries which have been made in Asia Minor in recent years, and which bear on the interpretation, the historical authenticity, and the date of composition of the Acts, do not include any striking or sensational finds, but in their entirety they go far to constitute a new era in the understanding and the criticism of the parts of Acts concerned. To the com-

mentators and scholars of former days, the travel of Paul, Barnabas, and Silas, in the inner country, were like the voyage of a ship in the sea, which left no trace behind to mark their passage. Names like Lystra and Derbe were scattered on the map by guess; and, though the modern names of the sites where Iconium and Pisidian Antioch stood were known, yet their relative position and their connection with other places were in many respects erroneously conceived.

"Discussion for the future must take a new method; it must follow the apostles on their exact line of road. It has already ceased to be possible for a rational criticism to maintain that the narrative of these journeys is a free second-century composition; and it is rapidly ceasing to be possible to regard it as a series of first-century scraps, pieced together by a second-century compiler for his own purposes. Only a narrative written with full mastery by an eye-witness, or by one who was in communication with eye-witnesses, and able to use their accounts with delicate precision, could stand the minute study that is now demanded and applied. That minuteness is not restricted to geography, but extends to every department of interpretation. It is not a new discovery that the perplexing variety of titles for governors and magistrates of cities is correct in every case throughout the book; but it is now becoming far clearer than before that the duties, powers, and character of the officials are all correctly delineated. Recent discoveries are enabling us to conceive precisely what these officials were in actual life; and each new step in our knowledge only makes the narrative of Acts more luminous."

The Bakubas of Central Africa are representatives of an evidently superior tribe of Africans—tall, well made, with straight noses and light brown skins. They came from Bakuba Land and are said to have possessed a degree of civilization hitherto unsuspected in the wilds of the dark continent. They live in well constructed houses, and wear clothing made of an exquisite texture of palm fiber woven in hand looms. Their wood carving is exquisitely beautiful. They work in iron. Did they derive their civilization from the ancient Egyptians?

#### ALASKAN NATIVES ON THE KLONDYKE.

John Muir, the California naturalist and discoverer of the great Muir glacier, writes of "The Alaska Trip."

On the arrival of the steamer most of the passengers make haste to go ashore to see the curious totem-poles in front of the massive timber houses of the Indians, and to buy curiosities, chiefly silver bracelets hammered from dollars and half-dollars, and tastefully engraved by Indian workmen; blankets better than those of civilization, woven from the wool of wild goats and sheep; carved spoons from the horns of these animals; Shamans' rattles, miniature totem-poles, canoes, paddles, stone hatchets, pipes, baskets, etc. The traders in these curious wares are mostly women and children, who gather on the front platform.

f the half-dozen stores, sitting on their blankets, seemingly careless whether they sell anything or not, every other face blackened hideously, a naked circle about the eyes and on the tip of the nose, where the smut has been weathered off. The younger girls and the young women are brilliantly arrayed in ribbons and calico, and shine among the blackened and blanketed old crones like scarlet tanagers in a flock of blackbirds. Besides curiosities, most of them have berries to sell, red, yellow and blue, fresh and dewy, and looking wondrous clean as compared with the people. These Indians are proud and intelligent, nevertheless, and maintain an air of self-respect which no amount of raggedness and squalor can wholly subdue.

#### ABORIGINAL BOATS OF THE NORTHWEST COAST.

The forms of boats are products of several causes or exigencies co-operating. The exigency of water is the study of the kind of water and its conduct, and the natives have everywhere studied the nature of water. The craft has resulted by a sort of natural selection. Thus at the mouth of the Yukon river the kyack is decked over with seal skin to keep off the spray; farther up the river is a birch-bark kyack partially decked; while still above it is an open birch canoe with no decking, on account of the rapids.

#### THE CANOES OF THE HAIIDAS.

Many canoes may be seen along the shore, specimens of which may be seen in the frontispiece, all fashioned alike, with long and rak-like sterns and prows, the largest carrying twenty-five or thirty people. What the mustang is to the Mexican vaquero the canoe is to the Indian of the Alaska coast. They skim over the glassy, sheltered waters, far and near, to fish and hunt and trade, merely to visit their neighbors.

Professor Otis T. Mason exhibited before the Anthropological Society, May 18, 1897, a peculiar shaped boat from the Kootenay river, which in bow and stern was not unlike the modern ram or monitor, having a double point under water. The little model had been in the Smithsonian for forty years and was said to be an exact representation of the boats in use along certain parts of the Columbia river. It is made of the whole skin of the pine tree, and thus differs from the birch-bark canoe, which is made of pieces. This is reversed, so that the bast is outside and the bark inside; the ends are then drawn together and cut obliquely or with a slight curve from above downward, causing the bottom to project at the extremity, forming a point.

A line drawn across the Mercator map to Asia will strike the Koor river, where practically the same style of boat is

found, and the question was raised whether it showed contact or independent origin, and from the great resemblance it was thought the former, showing the migration of canoe forms from Asia to America.

Professor Mason premised these remarks by an outline upon the evolution of the boat. In the study of progress, water travel divides itself into *flotation* and navigation, the former meaning simply keeping above the surface, the latter including the higher problem of movement in a determined direction. Navigation includes the two elements of the hull and of the mechanism of movement.

The types of American aboriginal boats as conditioned by exigencies were then considered, beginning at the extreme north:

Kyack, or swift flying or man's boat for seal hunting. Umac, or scow or woman's boat for transportation.

Canada and northern United States, birch canoe, Haida.

Lower down on Pacific coast, Dugout, Thlinkit, Chinook.

Inland, Columbia river, Kootenay.

Missouri river, bull boat, which is nothing but a sort of crate with bull hide over it and pulled by a rawhide line, *i. e.*, towed.

South in east, Pirogue or dugout of soft log.

South and west, reed float or raft, reed catamaran.

On Pacific side of South America, Balsa.

In the interior and southward, wood and skin

The Selungs—a tribe of fishermen in the Margni Archipelago—are so very rude that they have no weapon, except the trident spear; and no houses, except the huts, which are made by placing four sticks on the ground and throwing a mat over them; and no food except fish and turtles, which they gather from the water, but they build boats which show considerable skill. These are made out of the trunk of the palm. The bottom is scooped out and opened or flattened in the center, rising at each extremity into a crescent shape at bow and stern. Above this solid bottom they place above one another palm or yongan sticks, bent into the round form of the boat's side, being compressed at the stern so as not to interfere with the symmetrical figure of the boat. The interstices are caulked with palm hemp. This is their home. In it, they wander from island to island, during a life time, and to this they trust their life and property. They are very much given to drunkenness. They depend for recovery from sickness solely on supernatural aid and the power of their medicine men or Shamans to exorcise the evil spirit and draw out the disease from the body of the patient in a sort of a "devil dance." It is a thirsty devil which is exorcised, for a whole jar of shamshoo is drunk off by the possessed man.—*R. C. Temple in the Indian Antiquary, May, 1897.*

## BOOK REVIEWS.

*The Story of Language.* By Charles Woodward Huston, author of *The Beginnings of Civilization*. A. C. McClurg & Co., Chicago, 1897; pp. 392.

This book contains an excellent summary of what has been written on the history of language. It contains, in Chapter I, a classification of the languages according to the stages of development as follows: 1, Monosyllabic; 2, Agglutinative; 3, Holophrastic or Polysynthetic; 4, Inflectional; 5, Analytic. The Chinese language is given as a specimen of the first, Finnic and Tungus as the second, American the third, Aryan the fourth, modern languages the fifth.

He also speaks, in Chapter II, of the Myths and the "Submerged Mythology" as one source of information about languages. The unearthing of roots of the Aryan language is the subject of Chapter IV. The variety of languages is owing to the separation of races. The more barbarous the race, the more numerous will be the tribal units, and the greater number of varieties of speech. Unless thrown into definite form by embodiment in a literature of some kind, language is constantly changing. Some races reach the plane of development where written literature appears, whose language is monosyllabic, while with others it is agglutinative, and so on. This gives the stereotyped forms which are recognized as ethnic. The American races did not reach the point of written literature. Their language was in a formative state, though they are supposed to belong to the great Turanian stock. "Their holophrastic type of speech, in which they put together in one utterance all the ideas they intend to express, is but an expansion of the agglutinative." "There was an infusion of Polynesian blood along the North Pacific Ocean, and possibly from the Cambodian shores among the civilized races of Central America."

The Semitic tongues include Assyrian, Hebrew, Phœnician, Aramaic and Arabic. The chief characteristics are: First, every verbal root is made up of three consonants; second, the verb has only two tenses—past and present; the lack of the verb to be. "Midway between the agglutinative type of the Turanians and the holophrastic tongue of the Americans, must be placed the Basque and the Etruscan." The ancient Acadians, who were allied with the Etruscans, were the earliest civilizers of Europe.

"The probability is that the same Turanian genius lay at the foundation of early Egyptian, Chaldean and Chinese civilization." Like the rest of the Turanian languages, the Chinese has no distinction of gender. "The principal excellences and advantages of the Chinese written language are its remarkable compactness and power of expression." The tongues of the Accads are the oldest of which we possess any trace." The Hittites was also of indefinite antiquity. They wrote in hieroglyphics of their own. There are five large groups on the north of Asia which use the agglutinative language—Tungus, Mongols, Finns, Turks and Samoyedes. "Anthropologists agree that the races found on the American Continent by Columbus show greater uniformity than the races of the old world." Still, "all

the traditional myths show the coming of civilizers differing from the natives." "White men with broad brows and flowing beards." "The effect produced by the advent of these strangers cannot be explained on the Solar Myth theory." The great multiplication of languages proves that the race had long been at a low stage of progress; that at no time had it risen by its own unaided efforts to the scale of civilization. The ruins that bear witness to the most ancient civilization are those in the Southern regions. "There are cities here whose glory departed before the Spaniards came." "In Yucatan, alone, there are over forty ruins in the forests. The identity of the hieroglyphic characters proves a common origin for their civilizations." "There are no hieroglyphics found among the Peruvians."

These assertions of the author, and the suggestion that Buddhistic priests reached America, confirm the opinion which the writer of this review has long held, though they will probably make a sensation among the linguists. The strongest proof that Buddhist priests reached America is found on a tablet which was recently received at the Field Columbian Museum. Upon this tablet there is a seated figure, holding up the right hand, with the fingers chiseled exactly as represented in an idol in our possession, as well as in nearly all other figures of Buddha. The tablet was sent from Nicaragua.

*Cabot's Discovery of North America.* By G. E. Weare, London; John McQueen, Philadelphia. J. B. Lippencott Company, 1897.

This book carries us back to the time of the World's Fair, when so many were studying the life and voyages of Columbus, and when maps, portraits and historical books were read with such avidity. The first chapter contains a summary of the history of the various travelers and navigators and map makers who prepared the way for Columbus and those who followed him, and informs about the strange ideas and fancies which prevailed as to the islands and continents which were situated in the far East. The story of Atlantis, which had been told by Solon and by Plato, as an island beyond the "Pillars of Hercules," and larger than Africa and Asia put together, was believed to be true, and the descriptions of Marco Polo, Sir John Mandeville, whoever he was, only magnified the vision. Prince Henry of Portugal took into his employ a number of Venetians, Genoese and Florentines, and undertook the circumnavigation of Africa, but died in 1463 without accomplishing his desire. As the outgrowth of numerous traditions, various maps were produced, on which certain islands known as "St. Brandon," "Brasil," "Antillia," "The Island of the Seven Cities," were placed. Among these was the Ptolemy map of 1482 and the Ortellius map. The men of Bristol placed so much confidence in these current stories that in the year 1480 they sent out an expedition in search of the island of "Brasille." The ships cruised about for nine months (or nine weeks) without finding the island. "They continued for seven years to send out every year, two, three or four light ships in search of this island and the 'Island of Seven Cities.'"

In 1497 John Cabot, who was of Genoese origin, after fifteen years' residence in Venice, sailed from Bristol on a voyage of discovery, under the direct authority of Henry the VII, of England. It will be remembered that King Henry had missed the opportunity of engaging Christopher Columbus

by a mere mischance. He therefore gladly extended his protection to the Venetian, John Cabot, "whose reputation as a skillful pilot was little inferior to that of the celebrated Genoese." He had long resided in England, and was already favorably known to the King, who had established trade between Bristol and Iceland and the Northern Seas.

John Cabot set sail in the *Matthew*, in May, 1497. A picture of this ship and of the church at Bristol, called St. Mary Redcliff, a beautiful structure, is given in the book. This church contains a memorial of Sir William Penn, the father of William Penn, the founder of Pennsylvania. "Never was a voyage of discovery, the consequences of which were so far-reaching, entered upon with less pomp and circumstance." "No diary of the voyage has been preserved." "The *Matthew* came home again the 6th of August, 1497." "Still, ambassadors and others became interested in the reports of the voyage." "Great honor was paid to Cabot, who is called the Great Admiral. He dresses in silk, and these Englishmen run after him like insane people." Such is the language of a letter written by a native of Venice to his brothers. He returned with the announcement that he had landed in the Great Kahn's Empire. "Cabot derived no benefit, either directly or indirectly, for he merely brought back with him 'certain snares, which had been set to catch game, and a needle for making nets.'" The supposition is that he landed upon the coast and found these things. A dispatch to the Duke of Milan states: "He is returned safe, and has found two very large and fertile new islands, having likewise discovered 'the seven cities,' four hundred leagues from England." Another dispatch, dated the 18th of December, 1497, states: "His Majesty has gained a part of Asia without a stroke of the sword, for a popular Venetian, called Messer Joanne Cabot, departed from Bristol in a little ship, with eighteen persons, passing Ireland more to the west, and ascending towards the north, he began to navigate the eastern part of the ocean. Having wandered enough, he came at last to the main land, where he planted the royal banner, took possession for His Highness, made certain marks and returned."

Such are the conflicting accounts of the Discovery by John Cabot, as given in this book. Though dispatches and translations are given in great numbers in the volume, the impression formed is that the event made very little sensation.

A second voyage was undertaken the following year, in a fleet of five vessels, which carried provisions for one year, but from the date of the sailing down to the present time, the fate of John Cabot and his score of adventurers has been shrouded in mystery. There are several accounts which ascribe the discovery of America to Sebastian Cabot. Even the *Decades* of Peter Marty ascribe it to him. The extraordinary statement is made that Sebastian Cabot invented a name for a portion of the region, which he alleged he had discovered—the name *Baccalaos*—because in the seas thereabout he found so great multitudes of certain great fishes, which the inhabitants call *baccaloas*, that they sometimes stayed his ships. The name was taken from the Basque language, and is deemed by some to be conclusive evidence of the previous acquaintance of the Basques with this coast.

Still it will be found, then, that the book is suggestive, and, whatever may be said about the style and method of treating the subject, it will have a



great value to those who are studying early American history, and especially those who are interested in pre-Columbian history.

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BOOKS RECEIVED.

*U. S. Geological Survey*, Charles D. Walcott, Director. XVII Annual Report, 1895-96. Parts I, II and III.

Ditto, *Monographs*—XXV, Upham, Glacial Lake Agassiz; XXVI, Newberry, The Flora and Amboy Clays; XXVII, Emmons, Cross Eldridge, Geology of the Denver Basin; XXVIII, Vanhise, Bailey, Smyth, The Marquette Iron-bearing District of Michigan.

*The Import of the Totem*. A Study from the Omaha Tribe, by Alice C. Fletcher. The Salem Press, Salem, Mass., 1897.

*Observations on a Collection of Papuan Crania*. By George A. Dorsey, with Notes on Preservation and Decorative Features by W. H. Holmes, Curator Department Anthropology, Field Columbian Museum. Publication 21, Anthropological Series, Vol. II, No. 1. 1897.

*Influence of Environment Upon Human Industries or Arts*. By Otis Tuf-ton Mason. From the Smithsonian Report for 1895, pp. 639-665. 1896.

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PAMPHLETS RECEIVED.

*A Preliminary Report on the Exploration of Ancient Key-Dweller Remains on the Gulf Coast of Florida*. Communicated by Frank Hamilton Cushing to the American Philosophical Society, Nov. 6, 1896.

*International Exchange List of the Smithsonian Institution*. Corrected to July, 1897. Published by Smithsonian Institution, 1897.



BEE HIVE MOUNTAIN, ALBERTA, CANADA.



TERMINAL MORaine, NEAR WHITEWATER, WIS.



CONE OF A HOT SPRING IN THE YELLOWSTONE REGION.



CONE OF GIANT GEYSER, YELLOWSTONE NATIONAL PARK.

THE  
*American Antiquarian.*

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THE PALÆOLITHIC AGE.\*

EXTRACTS FROM THE ADDRESS OF SIR JOHN EVANS, D. C. L.

Before entering into speculations on the subject of the antiquity of man, or attempting to lay down the limits within which we may safely accept recent discoveries as firmly established, it will be well to glance at some of the cases in which implements are stated to have been found under circumstances which raise a presumption of the existence of man in pre-glacial, Pliocene or even Miocene times.

Flint implements of ordinary palæolithic type have, for instance, been recorded as found in the eastern counties of England, in beds beneath the chalky boulder clay; but on careful examination the geological evidence has not to my mind proved satisfactory, nor has it, I believe, been generally accepted. Moreover, the archæological difficulty that man, at two such remote epochs as the pre-glacial and the post-glacial, even if the term glacial be limited to the chalky boulder clay, should have manufactured implements so identical in character that they cannot be distinguished apart, seems to have been entirely ignored.

Within the last few months we have had the report of worked flints having been discovered in the late Pliocene forest bed of Norfolk, but in that instance the signs of human workmanship upon the flints are by no means apparent to all observers.

But such an antiquity as that of the forest bed is as nothing when compared with that which would be implied by the discoveries of the work of men's hands in the Pliocene and Miocene beds of England, France, Italy and Portugal, which have been accepted by some geologists. There is one feature in these cases which has hardly received due attention, and that is the isolated character of the reputed discoveries. Had man, for instance, been present in Britain during the crag period, it would be strange, indeed, if the sole traces of his existence that he left were a perforated tooth of a large shark, the sawn ribs of a mandible, and a beaming full face carved on the shell of a pectenulus!

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\*Delivered before the British Association at Toronto, August, 1897.

In an address to the Anthropological Society at the Leeds meeting of this association in 1890, I dealt somewhat fully with these supposed discoveries of the remains of the human art in beds of tertiary date; and I need not here go further into the question. Suffice it to say that I see no reason why the verdict of "not proven," at which I then arrived, should be reversed.

In the case of a more recent discovery in Upper Burma in beds at first pronounced to be upper Miocene, but subsequently "definitely ascertained to be Pliocene," some of the flints are of purely natural and not artificial origin, so that two questions arise: First, Were the fossil remains associated with the worked flints or with those of natural forms? And second, were they actually found in the bed to which they have been assigned, or did they merely lie together on the surface?

Even the *Pithecanthropus erectus* of Dr. Eugene Dubois, from Java, meets with some incredulous objectors from both the physiological and the geological sides. From the point of view of the latter the difficulty lies in determining the exact age of what are apparently alluvial beds in the bottom of a river valley.

#### PALÆOLITHIC MAN.

When we return to palæolithic man of Europe it is satisfactory to feel that we are treading on secure ground, and that the discoveries of the last forty years in Britain alone enable us to a great extent to reconstitute his history. We may not know the exact geological period when first he settled in the British area, but we have good evidence that he occupied it at a time when the configuration of the surface was entirely different from what it is at present; when the river valleys had not been cut down to anything like their existing depth; when the fauna of the country was of a totally different character from that of the present day; when the extension of the southern part of the island seaward was in places such that the land was continuous with that of the continent; and when, in all probability, a far more rainy climate prevailed. We have proofs of the occupation of the country by man during the long lapse of time that was necessary for the excavation of the river valleys. We have found the old floors on which his habitations were fixed; we have been able to trace him at work on the manufacture of flint instruments, and by building up the one upon the other the flakes struck off by the primeval workman in those remote times we have been able to reconstruct the blocks of flint which served as his material. That the duration of the palæolithic period must have extended over an incredible length of time is sufficiently proved by the fact that valleys, some miles in width and of a depth of from 100 to 150 feet, have been eroded since the deposit of the earliest implement-

earing beds. Nor is the apparent duration of this period diminished by the consideration that the floods which hollowed out the valleys were not in all probability of such frequent occurrence as to teach palæolithic man by experience the danger of settling too near to the streams, for had he kept to the higher slopes of the valleys there would have been but little chance of his implements having so constantly formed constituent parts of the gravels deposited by the floods.

## BRITISH CAVES.

The relics in British cave deposits afford corroborative evidence of the extended duration of the palæolithic period. In Kent's cavern, at Torquay, for instance, we find in the lowest deposit, the breccia below the red cave earth, implements of flint and chert corresponding in all respects with those of the high level and most ancient river gravels. In the cave, though these are scarcer, though implements occur which also have their analogies in the river deposits; but, what is more remarkable, harpoons of reindeer's horn and needles of bone are present, identical in form and character with those of the caverns of the reindeer period in the South of France, and suggestive of some bond of union or identity of descent between the early glodrytes, whose habitations were geographically so widely separated from the one from the other. In a cavern at Creswell, on the confines of Derbyshire and Nottinghamshire, a bone has moreover been found engraved with a representation of a horse in precisely the same style as the engraved bones of the French caves. It is uncertain whether any of the earlier drift specimens belong to so late a date as these artistic remains; but the greatly superior antiquity of even these early neolithic relics, is testified by the thick layer of stalagmite which had been deposited in Kent's cavern before its occupation by men of the neolithic and bronze periods.

Towards the close of the period covered by the human occupation of the French caves, there seems to have been a dwindling of the number of the larger animals constituting the Quaternary fauna, whereas their remains are present in abundance in the river and therefore more recent of the valley gravels. This circumstance may afford an argument in favor of regarding the period represented by the later French caves as a continuation of that during which the old river gravels were deposited; and of the great change in the fauna that has taken place since the latest of the cave deposits included in the palæolithic period is indicative of an immense lapse of time. How much greater must have been the time required for the more conspicuous change between the old Quaternary fauna of the river gravels and that characteristic of the neolithic period!

As has been pointed out by Prof. Boyd Dawkins, only thirty-one out of the forty-eight well-ascertained species living in the post-glacial or river-drift period survived into prehistoric or neolithic times. We have not, indeed, any means at command for estimating the number of centuries which such an important change indicates; but when we remember that the date of the commencement of the neolithic or surface stone period is still shrouded in the mist of a dim antiquity, and that prior to that commencement the river-drift period had long come to an end; and when we further take into account the almost inconceivable ages that even under the most favorable conditions the excavation of wide and deep valleys by river action implies, the remoteness of the date at which the palæolithic period had its beginning almost transcends our powers of imagination. We find distinct traces of river action from 100 to 200 feet above the level of existing streams and rivers, and sometimes at a great distance from them; we observe old fresh-water deposits on the slopes of valleys several miles in width; we find that long and lofty escarpments of rock have receded unknown distances since their summits were first occupied by palæolithic man; we see that the whole side of a wide river valley has been carried away by an invasion of the sea, which attacked and removed a barrier of chalk cliffs from 400 to 600 feet in height; we find that what was formerly an inland river has been widened out into an arm of the sea, now the highway of our fleets, and that gravels which were originally deposited in the bed of some ancient river now cap isolated and lofty hills.

#### CHANGES OF CLIMATE.

And yet, remote as the date of the first known occupation of Britain by man may be, it belongs to what, geologically speaking, must be regarded as a quite recent period, for we are now in a position to fix with some degree of accuracy its place on the geological scale. Thanks to investigations ably carried out at Hoxne, in Suffolk, and at Hitchin, in Hertfordshire, by Mr. Clement Reid, under the auspices of this association and of the Royal Society, we know that the implement-bearing beds at those places undoubtedly belong to a time subsequent to the deposit of the great chalky boulder clay of the eastern counties of England. It is, of course, self evident that this vast deposit, whatever manner it may have been formed, could not, for centuries after its deposition was complete, have presented a surface inhabitable by man. Moreover, at a distance but little farther north, beds exist which also, though at somewhat late date, were apparently formed under glacial conditions. At Hoxne the interval between the deposit of the boulder clay and of the implement-bearing beds is distinctly proved to have witnessed at least two noteworthy changes in climate. The bed

immediately reposing on the clay are characterized by the presence of alder in abundance, of hazel and yew, as well as by that of numerous flowering plants indicative of a temperate climate very different from that under which the boulder clay itself was formed. Above these beds, characterized by temperate plants, comes a thick and more recent series of strata, in which leaves of the dwarf Arctic willow and birch abound, and which were in all probability deposited under conditions like those of the cold regions of Siberia and North America.

#### PALÆOLITHIC IMPLEMENTS.

At a higher level and of more recent date than these—from which they are entirely distinct—are the beds containing palæolithic implements, formed in all probability under conditions not essentially different from those of the present day. However this may be, we have now conclusive evidence that the palæolithic implements are, in the eastern counties of England, of a date long posterior to that of the great chalky boulder clay. It may be said, and said truly, that the implements at Hoxne cannot be shown to belong to the beginning rather than to some later stage of the palaeolithic period. The changes, however, that have taken place at Hoxne in the surface configuration of the country prove that the beds containing the implements cannot belong to the close of that period. It must, moreover, be remembered that in what are probably the earliest of the palæolithic deposits of the eastern counties, those at the highest level, near Brandon, in Norfolk, where the gravels contain the largest proportion of pebbles derived from glacial beds, some of the implements themselves have been manufactured from materials not native to the spot, but brought from a distance, and derived in all probability either from the boulder clay or from some of the beds associated with it.

#### PALÆOLITHIC CIVILIZATION.

We must, however, take a wider view of the whole question, for it must not for a moment be supposed that there are the slightest grounds for believing that the civilization, such as it was, of the palaeolithic period originated in the British Isles. We find in other countries implements so identical in form and character with British specimens that they might have been manufactured by the same hands. These occur over large areas in France under similar conditions to those that prevail in England. The same forms have been discovered in the ancient river gravels of Italy, Spain and Portugal. Some few have been recorded from the North of Africa, and analogous types occur in considerable numbers in the south of that continent. On the banks of the Nile, many hundreds of feet above its present level, implements of the European types have been discovered; while in Somaliland, in an ancient river valley at a great eleva-



tion above the sea, Mr. Seton-Karr has collected a large number of implements formed of flint and quartzite, which, judged from their form and character, might have been dug out of the drift deposits of the Somme or the Seine, the Thames or the ancient Solent.

In the valley of the Euphrates implements of the same kind have also been found, and again farther east in the lateritic deposits of Southern India they have been obtained in considerable numbers. It is not a little remarkable, and is at the same time highly suggestive, that a form of implement almost peculiar to Madras reappears among implements from the very ancient gravels of the Manzanares at Madrid. In the case of the African discoveries we have as yet no definite palæontological evidence by which to fix their antiquity, but in the Narbada valley of Western India palæolithic implements of quartzite seem to be associated with a local fauna of pleistocene age, comprising, like that of Europe, the elephant, hippopotamus, ox and other mammals of species now extinct. A correlation of the two faunas with a view of ascertaining their chronological relations is beset with many difficulties, but there seems reason for accepting this Indian pleistocene fauna as in some degree more ancient than the European.

Is this not a case in which the imagination may be fairly invoked in aid of science? May we not from these data attempt in some degree to build up and reconstruct the early history of the human family? There, in Eastern Asia, in a tropical climate, with the means of subsistence readily at hand, may we not picture to ourselves our earliest ancestors gradually developing from a lowly origin, acquiring a taste for hunting, if not, indeed, being driven to protect themselves from the beasts around them, and evolving the more complicated forms of tools or weapons from the simpler flakes which had previously served them as knives? May we not imagine that when once the stage of civilization denoted by these palæolithic implements had been reached the game for the hunter became scarcer, and that his life in consequence assumed a more nomadic character? Then, and possibly not till then, may a series of migrations to "fresh woods and pastures new" not unnaturally have ensued, and these following the usual course of "westward toward the setting sun," might eventually lead to a palæolithic population finding its way to the extreme borders of Western Europe, where we find such numerous traces of its presence. How long a term of years may be involved in such a migration it is impossible to say, but that such a migration took place the phenomena seem to justify in believing. It can hardly be supposed that the process that have shadowed forth was reversed, and that man, having originated in Northwestern Europe, in a cold climate where clothing was necessary and food scarce, subsequently migrated eastward to India and southward to the Cape of Good Hope. As yet our

records of discoveries in India and Eastern Asia are but scanty; but it is there that the traces of the cradle of the human race are, in my opinion, to be sought, and possibly future discoveries may place upon a more solid foundation the visionary structure that I have ventured to erect.

## A RELIC OF DE SOTO'S EXPEDITION FOUND IN ALABAMA.

By H. S. HALBERT.

For full twenty years the writer of this article has been familiar with the finding of a case of Spanish weights in Pickens County, Alabama, plowed up on Mr. John H. Alexander's plantation. This case of weights was for a long time a mystery to the people of that vicinity, being so dissimilar to anything in use among American people. But I have been informed that cases of weights of exactly the same pattern as this Pickens County relic are still in common use in Mexico, and perhaps in other Spanish countries. This relic remained for a long time in the possession of Mr. Alexander, but after his death it was lost, or in some manner disappeared, and no one has as yet succeeded in tracing it up, though several efforts have been made to that effect. In the summer of 1896, I wrote a letter of inquiry in regard to this relic to Colonel W. L. Doss, of West Point, Mississippi, and his reply, bearing the date of June 3, 1896, is here given:

"DEAR SIR:—Yours of the 1st inst., received, and in reply I would say that Mr. Alexander's farm is about three miles nearly southwest of Yorkville, Pickens County, Alabama. Mr. Alexander found the weights on his farm in the early summer of 1843. I had business with Mr. Alexander and went to his plantation to see him. He was running a plow himself and plowed the weights up and brought them up to the fence where I was, and showed them to me. I had never seen anything like them before, and when I landed at Matamoras, during the war with Mexico, I noticed a nest of weights on the counter in a store precisely like that nest of weights found on Mr. Alexander's farm. It matters not what those gentlemen thought about the location, I was there and know whereof I speak. I think it was on the south side of Kincaid's Creek."

As will be noticed, Colonel Doss saw the case with the weights enclosed soon after it was found by Mr. Alexander. If this find can be referred to De Soto's expedition, it surely gives us one point along the line of his march from Cabusto on

the Black Warrior to the Tombigbee. According to Claiborne's "Mississippi," De Soto crossed the Tombigbee at "Lincecum's Shoals," which are about five miles above Columbus, and "just above the mouth of Tibbee, and a little below the present town of Waverly." Whether Cabusto was near Erie on the Black Warrior, according to the "guess" of Meek and Pickett, or near Carthage on the same river, according to the researches of the late Major J. W. D. Wright, of Alabama,—in either case, or from either point, the Spanish line of march must have traversed the country near Yorkville so as to strike the Tombigbee at Lincecum's Shoals. I quote a few lines from a letter received from Major Wright in 1891:

"The finding of those weights along that route confirms my strong belief from other research that De Soto crossed the Black Warrior between what is now Carthage Station on the Black Warrior and Tuscaloosa. I think that it can be clearly shown that the site of Cabusto, just above which De Soto crossed the Black Warrior, is now marked by the twenty or thirty fine Carthage mounds, which Col. Dupre visited with me. For nothing is clearer to my mind after reading most carefully the old Spanish records, than that the Indians De Soto saw or their immediate ancestors built a large part of the Indian mounds, if not all of them. Garcilaso tells just how and why they made them."

De Soto undoubtedly moved along the Indian trails in his marches over the Gulf States. Some years ago I was informed by several of the old settlers of Pickens County that in the early settlement of that county there were several Indian trails leading across Pickens County from the Tombigbee to the Black Warrior, and that these trails were even used by the white immigrants before the making of the present roads. Dr. H. D. Williams, a well known citizen of this county, informs me that a number of miles to the southeast of Yorkville, there is a considerable remnant of one of these old trails, traversing primeval forest and leading more or less to the northeast. This perhaps may be the very trail travelled by De Soto, traversing the country some two miles or more below Yorkville, and the place where the weights were found may possibly mark the place of his last camp before reaching the Tombigbee.

We close this notice of the De Soto relic with a few observations in regard to two Indian names recorded by De Soto's chroniclers, Pafalaia and Cabusto. I feel sure that Pafalaia is a Spanish worn down or corrupted form of the Choctaw Pas-falaia, meaning "Long-haired." Adair strongly confirms this view, for somewhere in his "American Indians" he says that the Choctaws were sometimes called Pas-falaia, "Long-haired."

Was Cabusto a Chickasaw town? In Chickasaw the word for great is ishto, corresponding to the Choctaw chito. Oka ish to,

"Big Water," in imperfect Spanish articulation, it seems to us, could well be corrupted into Okabushto, Kabushto, the b having the force of v or w. A somewhat similar corruption can be seen in the case of a creek in Jasper County, Mississippi, Okatalaia, "Standing Water," corrupted by the whites into Kwatalaia.

Mavilla, Tuscaloosa, Pafalaia and Cabusto are names proving that the Choctaws and perhaps the Chickasaws were living on the Alabama and the Black Warrior waters during the time of De Soto's invasion.

After the final departure of the Spanish army from the Gulf States, there was a reflux migration of the eastern Choctaws and Chickasaws from the Alabama and Black Warrior country to the country west of the Tombigbee, where no doubt the bulk of the two tribes had been concentrated for untold centuries? Was there a hostile pressure that caused them to retire beyond the Tombigbee, or was the migration entirely peaceful? Several years ago I was informed by an intelligent Mississippi half-breed Choctaw that he had, in by-gone years, made diligent inquiry among the oldest Choctaws as to where the Choctaws had come from, and that they invariably pointed to the south-east, towards South Alabama, as the region from which the Choctaws had emigrated. If any reliance can be placed on this tradition, could it not have special reference to the withdrawal of large bands of Choctaws, immediately after De Soto's day, from South Alabama westward or rather northwestward across the Tombigbee into central Mississippi. There is no doubt but the tradition of such a migration could be well preserved for two or three hundred years.

## THE SYMBOL OF THE HAND.

BY LEWIS W. GUNCKEL.

One morning in February, 1892, I was standing on the crest of a high mesa, about two miles from the small village of Aztec, New Mexico, impressed with the strange grandeur of the panorama which seemed spread out before me. The Animas river wound in snake-like motion as far as the eye could see to the north and the south, hemmed in on each side by strange, cap-shaped mesas and flat-topped promontories, whose steep and sloping sides, destitute of vegetation, seemed to hem in the alluvial bottom lands abutting the rapid, ever-winding river. Far below me, near the river, lay the ruined walls, mounds and heaps of debris of an immense pueblo, whose very name and history had been long forgotten. At my feet, on the sandy soil of the mesa, lay some bones and potsherds of one of its ancient inhabitants, which had been unearthed and thrown up from the burial place in the white, sandy soil by some prairie dog, when burrowing its hole with philosophic indifference. Not a living thing could be seen. The region, as far as the eye could penetrate, was a sandy and desert waste, and one could see only some stunted sage and greasewood bushes dotting the glistening soil at intervals; and some thick underbrush in close proximity to the river along the more fertile bottom lands far below me. The strange loneliness of the place, the impressive silence, the bright glare of the noon-day sun shone on the dazzling white stretches of sand, and these unmistakable evidences of man's prehistoric handiwork so long deserted and forgotten, impressed me deeply. While meditating upon the weird scene before me, I glanced curiously at the potsherds at my feet, and was surprised to see on one piece about four inches wide the perfect delineation of the *red hand*. Picking it up and examining it closely, I could not help but admire the skill of the ancient artist, and ponder as to what strange significance this symbol had. .) It seemed always

(\*) "The figure of the human hand is used by the North American Indians to denote supplication to the Deity or Great Spirit, and it stands in the system of picture writing as the symbol for strength, power or mystery, thus derived. In a great number of instances which I have met with of its being employed both in ceremonial observances of the dances, and in their pictorial records, I do not recollect a single one in which this sacred character is not assigned to it." The former (use of the hand symbol alone) is the most mysterious use of it, precisely because there are no accessories to help out the meaning, and it is, I think, in such isolated cases to be regarded as the general sign of devotion. Mr. Schoolcraft, in Appendix to "Incidents of Travels in Yucatan." Vol. II., N. Y. 1848, Page 477.

to haunt me in my travels and studies, until by constant exaggeration it had for me almost a mysterious portent. One day, a few weeks later, when returning to camp from one of the side cañons entering into the valley called "Butler's Wash," in Southern Utah, tired out and thirsty, for water was peculiarly scarce, we noticed at one place on the bare stone wall of a canon, about eight feet from the ground, a painting of the human hand in green. We went over to examine it more closely, and found, much to our surprise and delight, directly under it a small spring of clear, cool water, which bubbled out from the sandstone ledge, ran a few feet over the parched ground and then disappeared again, the dry soil soaking it entirely up. Was this peculiar symbol put there to mark the spring, or to show its ownership by its ancient discoverer? Or was it the silent offering of thanks to some unknown deity for the long-wished-for water, so scarce in this region? Whatever it was, it was always accepted as a good omen to our party after that incident, and we almost held it in reverence. (\*) What peculiar meaning does this symbol have? Surely a mere caprice or childish impulse would not be so widely spread over this entire region. We found it in almost every cave, and in many of the high cliff dwellings painted, or slapped on by the hand (dipped in the paint previously) in red, yellow, brown, green and white colors. (†).

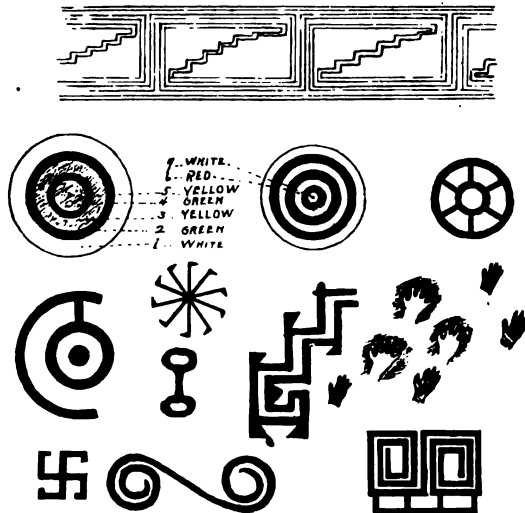
It occurs with great frequency in many parts of Arizona, New Mexico, Utah and Colorado, and in our trip through the cañons we had always taken great pains to note down every occurrence met with, with full memoranda concerning them. It is found more frequently than any of the other pictographs and symbols common to this region, and seems to have been in common use by the pueblo and cliff-dwelling tribes. Other pictographs and symbols are found very frequently painted in various colors representing animals, human beings together with figures and signs difficult to describe. (§) We all know that the imprint in ink or the thumb of any one individual

(\*) "Pictographs and Rock Paintings of the Southwest," in *THE AMERICAN ANTIQUARIAN*, Vol. XV., No. 4, July, 1893, Page 226.

(†) "Ruins and Picture Writings in the Canons of the McElmo and Hovenweep," in *The Illustrated American*, Vol. XI., No. 124, P. 325.

(§)—In an excursion which I made in the year 1831 into the more unfrequented and interior parts of the Chippewa country, lying between the group of the Twelve Apostles Islands in Lake Superior and the Falls of St. Anthony, I came to a curious edifice, situated in the edge of a forest, on the elevated banks of a fine lake, which was exclusively used as the village temple. It was built of stout posts, describing a circle, firmly and well sheathed with thick bark fastened on transverse pieces. I was permitted to inspect the building. Drum rattles and other insignia of the priest's art were hung upon the wall. Heads of men were rudely carved or inscribed, and numerous marks of the hand, as in the case of naked dancers were impressed on the involutions of the inner walls.—Mr. Schoolcraft in *Op. Cit.* Vol. II., Page 477-478.

differs to a greater or less extent, from that of any other one; and that it was often used in the past, as a mark or seal to legal and other instruments, and sometimes even as a signature when the owner was unable to sign his name in writing. Therefore, if such is the case, and the imprint of the thumb alone is sufficient to mark or stamp an object with the sign of authority or ownership, much more recognizable would be the imprint of a whole hand. It is well known that no two individuals have hands exactly the same size and shape and that the lines in the palms differ in every person. Consequently it is not at all unreasonable to assume that this imprint of the human hand was used by many aboriginal tribes as a mark of authority or ownership. We had found in the huge cavern called the *Casa del Echo* in Utah, over a hundred of these



THE HAND AMONG THE CLIFFS OF UTAH.

imprints, but they were spread along the wall of the limestone ledge, back of the walled up and fortified houses. There were seldom more than two or three imprints at the back of each walled room, and each imprint seemed to differ from its neighbor in size, and in contours. Would it be unreasonable to assume that the owners of each apartment had left their mark of ownership at the back of each room? What better sign could have been used than one which was impossible to imitate by fraud or forgery? Most of the imprints in this cave were of white paint with a previously painted background of a reddish brown color. They were of various sizes; some large, and some small. Some looked old and wrinkled, while others seemed round and plump. The imprints of the hands of young girls

and children could also very easily be distinguished. One of our party suggested that perhaps each one of the residents of the cave dwelling placed the imprints of their hands on the walls of the cave in place of the modern way of the writing of signatures. About one half mile east of the junction of the McElmo and Hovenweep Creeks, near the Utah and Colorado State line, we found some pictographs etched about a quarter of an inch deep on the side of a large sandstone boulder, consisting of rude symbols of the hand, human figures showing arms upraised and signs of imprints of the bare feet. On the top of a high cliff about one mile south of Bluff City, Utah, we noticed several cliff dwellings almost hidden on a narrow ledge. Owing to the erosion of the soft sand stone, all means of entering it either from below or above had long since worn away. Accordingly, one of our party was lowered into the ruin by means of a rope let down from above. On the stone ledge back of the cliff houses, he found twelve imprints of the human hand, in white, with a reddish brown back-ground. Judging from the inaccessibility of this ruin, and its undisturbed condition, it had without doubt never been entered by any one, since it had been deserted by its aboriginal owners. In a cave town which we called "Cold Spring Cave," situated in an immense sandstone out-cropping between the Macomb's Wash and Butler Wash in Southwestern Utah, we found the walls of the "box" canon near the fortified stone dwellings covered with pictographs, the most common of which were the imprints of the hand in red, white, brown and yellow paint, and one in green. There were over one hundred of this symbol alone, and they were grouped together according to their various colors. We found some others on the sides of a cliff some distance away. In "Monarch's Cave" which is about one mile west from "Cold Spring Cave," we found twenty-five red imprints of the hand on the wall of the cave, back of the cliff dwellings. These were at such a height above the floor of the cave that we could not help wondering why they put them there, and how they could have reached such an inaccessible place. Near by is a rude pictograph in brown paint which measured eighteen feet in length and six feet in height, but so crude and weathered, that it was impossible to make it out at all. Some three hundred feet north of this cave there is a ledge of sandstone where we found many more imprints of the hand. Upon measuring them with my own hand, which is smaller than the average, I found that all of them were much smaller. All of this group were of red paint except one which was green. Then further down the cañon we found six more green, and twelve red imprints; and then a group of about a dozen green, red and white imprints mixed indiscriminately together; also some other pictographs and rude representations of the human figure with one or both arms upraised. About two



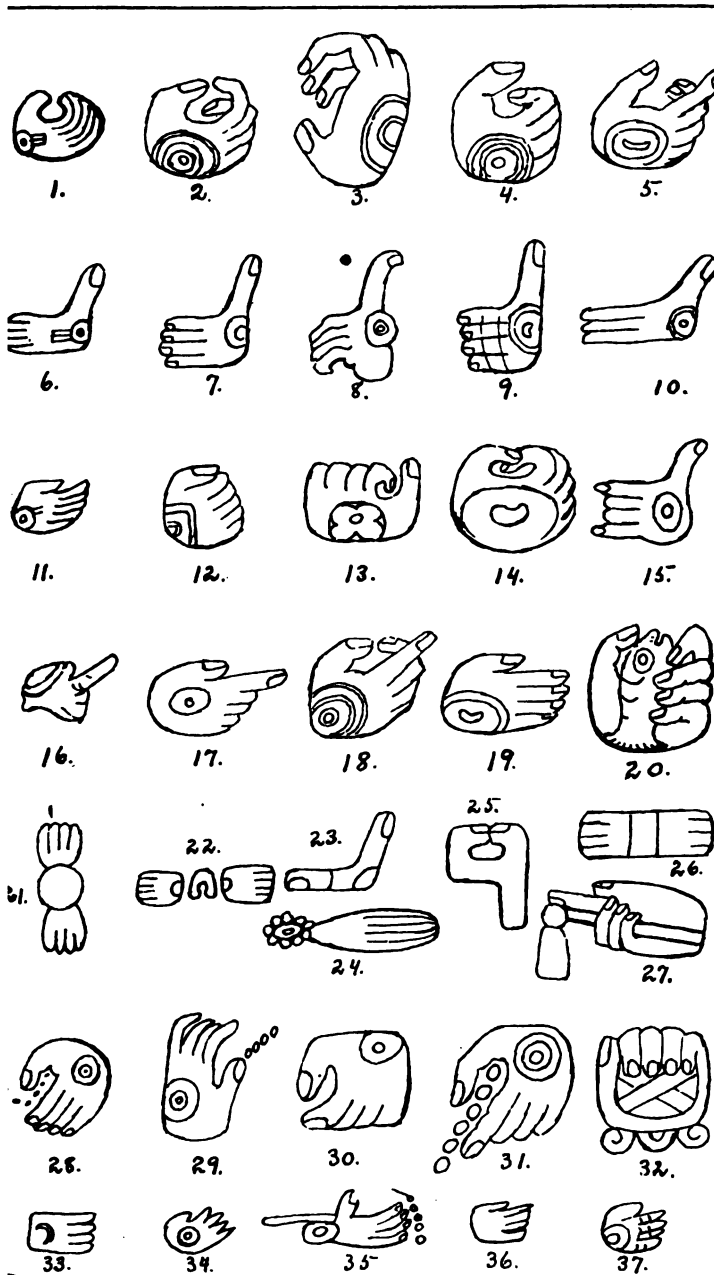
miles east of this point, we found another series of ruins in a cañon called Cottonwood Gulch and here were also found a large number of red and white imprints of the hand. Here I found two remarkable symbols of the hand which measured one foot in height and five inches in width, etched into the soft sandstone about an eighth of an inch deep and surrounded on all sides by smaller red imprints. We continued to find these symbols in or near most all of the cave towns, cliff houses and ruins which we visited in the region. In several instances we noticed that they differed slightly from the others, in the fact that they were made by placing the dry hand against the stone wall and painting all around the outside, leaving the imprint unpainted. We learn from the explorations of Mr. McLloyd,\* who has made an extensive examination of the cliff dwellings along the deep and precipitous cañons of the Colorado, that the symbol of the hand was usually placed in this region above the entrance of each building. The imprint of the right hand seems to occur more frequently than that of the left, although both are found in some instances. Mr. Moorehead(†) was of the opinion that this symbol, when found upon pottery, shell, or stone, might be ceremonial, ornamental or totem of the tribe to which the possessor of the object belongs; and that it was put in various uses by the different peoples; but that all seem to have agreed in stamping it upon the walls and doors of houses as a mark of ownership and as an assurance of good times. Mr. Stephens(‡) in speaking of Mr. Catlin's collection of Indian curiosities, which the latter had obtained during a long residence among our North American Indians, describes a tent which had been presented to Mr. Catlin by the chief of the powerful, but now extinct race of Mandans, which shows, among other marks, two prints of the red hand. He had also been further advised that the sign of the hand was to be seen often on the buffalo robes and skins of wild animals, brought in by the hunters of the Rocky Mountains, and that it was a symbol recognized and in common use, by the North American Indians of the first half of the present century. This curious symbol also occurs quite frequently in the Mississippi Valley on pottery, shell and stone where we find it mentioned by many authorities, among others by Messrs. Squier and Davis, (§) Rev. S. D.

(\*)—"The Symbol of the Hand" in *The Illustrated American*, Aug. 13, 1892, page 608.

(†)—"Primitive man could not have chosen a better symbol. He knew that his hand was the most useful portion of his body, yet he was unable to understand its delicate mechanism, or appreciate its wonderful adaptability to a thousand varied uses. Yet he employed reproductions of it to represent the power, authority and rights of man."—W. K. Moorhead, *Op. Cit.*, page 610.

(‡)—"Incidents of Travel in Yucatan"—New York 1848, Vol II, Page 47.

(§)—"Ancient Monuments of the Mississippi Valley," Page 226.



FIGURES OF THE HAND IN THE GLYPHS.

Peet (\*), Col. Garrick Mallory (†), and W. P. Clark(||). Mr. Holmes calls attention to a curious specimen of stone disc on which there is a well drawn hand, in the palm of which is an open eye, and the whole surrounded by two knotted rattlesnakes found near Carthage, Alabama. (§) This symbol has been found in many rock carvings in Ohio. Some of the most important are as follows:—Newark, Licking County, where the inscription contains many human hands, many varieties of birds, and a rude cross like sign; also at Independence, Cuyahoga County, where the rock carving shows human hands and feet, with serpents; and at Amherst, Lorain County, there is one which presents similar objects. The inscription at Wellsville, Columbiana County, contains more elaborate and varied characters. (\*) This symbol does not occur as often in the groups of pictographs in this region as we would imagine. A sign which may readily be mistaken for that of the hand, is that of "bear tracks," as figured in the Moki inscription at Oakley Springs, Arizona. (†) A little care on the part of the observer will readily distinguish between these two signs. The symbol of the hand is plainly depicted on the Algonkian petroglyph copied from a rock opposite Millsborough, in Fayette County, Pennsylvania, also on an etched sandstone rock called the Hamilton Picture Rock, on the Hamilton Farm, six miles southeast of Morgantown in West Virginia. (§) General G. P. Thruston describes two ancient bottles or rather jars from Alabama, which were ornamented with the figures of an open hand, (||) which are of especial interest on this point. Mr. Schoolcraft met this

(\*)—"AMERICAN ANTIQUARIAN," Vol. VI, No. 2, Pages 119 32.

(†)—"Sign Language of the N. A. Indians" in Rept. of Bureau of Ethnology, Vol. I.

(||)—"The Indian Sign Language," Phila., 1885.

(§)—"I have seen in the National Museum at Carthage, Alabama, a curious specimen of stone disc, which should be mentioned in this place, although there is not sufficient assurance of its genuineness to allow it undisputed claim to a place among antiquities. It is a perfectly circular, neatly dressed sandstone disc, twelve inches in diameter, and one half an inch in thickness. Upon one face we see three marginal incised lines, while on the other, there is a well engraved design which represents two entwined or rather knotted rattlesnakes. Within the circular space enclosed by the bodies of the serpents is a well drawn hand, in the palm of which is placed an open eye. This would probably have been omitted by the artist had he fully appreciated the skeptical tendencies of the modern archaeologist."—W. H. Holmes in "Art in Shell of the Ancient Americans," in 2nd Annual Report of the Bur. of Ethnology, Page 278.

(\*)—Final report of the Ohio State Board of Centennial Managers. Columbus, 1877.

(†)—"Pictographs of the North American Indian," by Garrick Mallory, 4th Annual Report, Bureau Ethnology, Washington, 1882-3, Page 46.

(§) Ibid.

(||)—"The bottle or water jar ornamented with the figure of an open hand from Noel Cemetery was discovered since Plate V was engraved.

symbol of the hand (\*) very many times during his residence on the frontiers, and during his various journeyings among the Indian tribes. He found them drawn or painted on bark, skins of animals, and even tabular pieces of wood, in the region of Lake Superior, and the sources of the Mississippi. He also noticed its use among the Dacotahs, the Winnebagoes, and other western tribes, and also among the numerous branches of the red race, still located east of the Mississippi, above the latitude of forty-two degrees who speak dialects of the Algonquin language. He explains also that the want or absence of the hand or arm, therefore in these symbolic figures, should imply impotence, weakness or cowardice, arising from fright, subjugation or other causes—for such was found to be the import of the armless figure of the human body in two of the symbols of the ancient hieroglyphic inscription on the Assouet or Dighton Rock; as explained by the well known American Chief Chingerauk. (†) The symbol of the hand forms a part of some of the most numerous hieroglyphs in the Mayan writing, and can be frequently seen in the Codex Troanus, Cortesianus, Peresianus, and Dresdensis, and in the mural inscriptions and monuments at Palenque, Copan, Tikal, Chichen Itza and other points. It is found in many significant forms in the Mayan pictures and inscriptions, each of which, perhaps, had some special significance. The most common form, which Brasseur called *la main qui se ferme* is considered by Dr. Brinton to be the rebus for *mach*, "to grasp." (§) Hence a variant of this si n

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Unfortunately its long burial has partly obliterated the design and coloring, but enough remains to show their general outlines. The design was evidently ideographic and probably possessed some peculiar significance. A vessel of the same size and form, and similarly ornamented, but with an upraised hand, was found in Franklin County, Northern Alabama, near the Mississippi line and is well illustrated in the Fourth Annual Report of the Bureau of Ethnology," page 433. The two vessels are so nearly alike that they appear to have been decorated in the same aboriginal paintshop.—Gen. G. P. Thruston in "Antiquities of Tennessee."—Cincinnati 1890, Pages 136 and 333.

(\*) Op. Cit., Vol. II, Pages 477-478.

(†)—"When the inscriptions are found to be on wood as they often are in the region of Lake Superior and the sources of the Mississippi, they have sometimes been called "music boards." I induced a noted *mida* or priest to part with one of these figure boards, many years ago, and afterward obtained impressions from it in this city, by passing it through Mr. Mannick's rolling press. It was covered with figures on both sides, on one side containing forty principal figures; six embrace the symbol of the uplifted hand, four of which had also the arm, but no other part of the body attached. Their import, which the man also imparted to me, is given in the general remark above. On the reverse of this board, consisting of thirty-eight characters, nine embrace the uplifted hand, in one case form a headless trunk, but the eight others connected with the whole frame."—Mr. Schoolcraft in Op. Cit., Vol. II, Page 477.

(§)—"A Primer of Mayan Hieroglyphs," published by the Univ. of Pennsylvania, 1896, Page 83.

such as the imprint of the human hand so often found in these crumbling ruins could easily have the meaning of power, authority, or the mark of possession. Such was the explanation given by the Indians to Mr. Stephens, who had asked them if they knew its meaning. They had answered him, that it was the sign of the "master of the building"—which certainly cannot be far from a correct interpretation of this mysterious symbol. The sign for the closing hand, (see fig. 1.) is also the sign for the day, *manik*, and occurs very frequently in the manuscripts and inscriptions in a somewhat modified form which we have mentioned in detail in another place. (\*) The sign of the hand must have been one full of meaning among the Mayas for it is found in important positions in the manuscripts, sculptures and mural inscriptions, and occurs with unusual frequency. (†) That many of these delineations are drawn or evolved from some form of gesture speech, is now accepted by authorities as a fact, and by means of this we are greatly facilitated in our interpretation by comparisons with the gesture speech of other localities, so ably collected together by Col. Garrick Mallery (§) and W. P. Clark. (‡) Dr. Brinton has correctly interpreted a number of variants (¶) of this sign taken from the manuscripts, some of which we present here with similar examples from the mural inscriptions and sculptured stelae for the sake of comparison. It will readily be noticed that the forms from some of the inscriptions are more complicated and elaborate than those of the manuscripts, although the essential features are the same. Dr. Valentini has justly called the forms found in the manuscripts, the tachygraphs of the more elaborate prototypes of the mural inscriptions. We find a number of forms somewhat resembling Fig. 1 in the inscriptions but which show the hands or fingers in a slightly different position. They, and in fact, most of all of the signs of the hand, are found in compound glyphs in conjunction with some other glyph form, which they are in the act of holding, supporting, grasping, giving, offering and sometimes even pointing at with index finger extended. Figures 2-5 are variants of the hand closing. Figures 6-10 are forms of the supporting hand which also occurs frequently both in the codices and inscriptions. Fig. 11 is intended to show the hand, palm upward, forming a cup, signifying no doubt an offering. Figures 12-14 are perhaps variants of Fig. 1; and Fig. 15 is a variant Fig. 6. Figures 16-18 show the index finger extended.

(\*)—"An analysis of the Day Signs in the Palenquean Inscriptions" in *AMERICAN ANTIQUARIAN*, Vol. XIX, No. 2, Page 81, March, 1897.

(†)—I have noted no less than one hundred and ten glyphs in the Mayan inscriptions containing some form of the symbol of the hand.

(§)—"Sign Language among the North American Indians," in *Report of the Bureau of Ethnology*, Vol. I.

(‡)—"The Indian Sign Language," Philadelphia, 1885.

(¶)—*Op. Cit.* Page 82.

ended as in the act of pointing or directing. Figures 19, 33, 4, 34, and 7 show the open palm, probably meaning an offering. Fig. 20 shows a hand grasping a fish. Figures 22 and 6 show a common double form which means union or friendship. Figures 23 25 are forms difficult to interpret. Figure 7 shows a hand holding some ornament. Figures 28-9, 31 and 35 appear to be distributing some sort of seed. Figures 2 and 35 seem to hold some object in the palm of the hand.

From the examples here noted, and from the many instances bounding in the manuscripts and sculptured texts, it can be readily seen that the symbol of the hand has no mysterious or strange portent, for it was used to a great extent as it was in gesture speech. Just what connection or relation, the imprint of the human hand so commonly found in this region, has to the hieroglyphic sign of the inscriptions, it is difficult to decide. It is possible that there was little or no connection between the two, yet the natural assumption would be that there is some positive relation more or less distinct. To grasp, to hold, and to offer, would naturally infer an ownership or possession, and in this alone we can see some definite connecting link to the imprint of the hand, which was the mark of ownership. The curious and conspicuous symbols of the red hand found on the ruined walls of these desolate ruins of Yucatan gives to the explorer a vivid impression of something life-like and personal about the buildings and naturally awakens exciting thoughts and imaginings concerning the departed and long forgotten inhabitants. As Mr. Stephens justly says—"It almost presented the images of the departed inhabitants hovering about the buildings." In one of the ruins at Kabah he found the whole wall covered with these imprints of the hand, bright and distinct as if newly made. \* It is more than probable that it is this bright and distinct coloring, together with the mere fact that we meet these imprints of the hand in the most unexpected places, that attracts the attention of the observer and arouses a sympathetic feeling in the midst of such desolation and ruin. † Stephens also found the imprints of the red hand on the walls in the Casa del Gobernador at Uxmal. The thumb and fingers were extended and they were stamped on the walls by living hands, and the seams and creases of the palm, were clear and distinct in the impression. These prints were exceedingly small, and when

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\* Op. Cit. Vol. I, Page 403.

† It is possible that the imprints of these hands are of more recent date than that of the buildings on which they are found. It is a known fact that in some parts of Mexico and Central America the custom of natives still exists of leaving the imprints of their hands on buildings of recent origin. The writer was surprised to see a number of these imprints on the walls of the railway depot at Zaral, 528 Kilometers from the city of Mexico and 56 Kilometers from San Louis Potosi, and again on the exterior walls of the bull ring in the city of Mexico, in 1897.



measured by the discoverers, it was found that their hands would entirely cover the prints and completely hide them. Mr. Stephens calls attention at this point, to the fact that he had previously mentioned in his work, that both from his own observations and from those which he had heard from others, the smallness of the hands and feet were the most striking features in the physical conformation of the Maya Indians of the present day. \* Mr. Saville also calls attention to these imprints of the red hand in the ruins of Labna. † Mr. Stephens found other prints of the red hand on the walls of a ruined building near Chichen Itza. ‡ These were larger than any he had seen, as he measured them with his own hand. Dr. Le Plongeon tells of his finding this symbol on a statue exhumed by him. He describes it as follows: "In August 1880 among the debris at the foot of the mound just described, I found pieces of what once had been the statue of a priest. The part of the statue from the waist to the knee particularly attracted my attention. Over this personage wore an apron, with an extended hand." § This interesting symbol has also been found many times on pottery, shell and stone in many parts of the world and attention has been repeatedly called to it by various authorities. Mr. Moorehead in his interesting article on this subject, traced back the use of this symbol to the early Egyptians, Jews, Assyrians and Greeks. \* Dr. Le Plongeon claims that this custom of devotees stamping the impression of their hands, dipped in red liquid, on the walls of the temples, caves and other places, when imploring some benefaction from the Deity, was in use not only among † the Mayas, but also in Polynesia and India. Mr. George Smith found while excavating the houses and temples in the cities of Kouyunjik and Nimroud, some curious rude models of hands which were placed in the walls fist up.

\* Op. Cit., Vol. I, Page 177 8.

† "The doorways of the palace are small being a little over six feet height and they have stone lintels. The white cement which once overspread the entire building still covers a portion of the walls of the rooms and on either side of one of the doorways may still be seen the mysterious red hand painted on the cement." *The Ruins of Labna*, in *The Archaeologist*, Vol. I, No. 12, Dec. '93. Page 232.

‡ Op. Cit. Vol. II, Page 46.

§ August Le Plongeon, in "Sacred Mysteries of the Mayas and Quiches," New York, 1886, Page 40.

\* "Of all the symbols none is more ancient than the symbol of the hand. Its origin is lost in the mists of antiquity, but its use as a symbol can be traced to the time of the early Egyptians, Jews, Assyrians and Greeks, when the impress of the signet or seal was left upon wax with the force of the hand, to denote the will of the person. Today is preserved in our legal phraseology with precisely the same significance and when we write "witness our hand and seal" we express thought common to men five thousand and more years ago.—W. Moorehead in Op. Cit., 1892. Page 608.

† "Queen Moo," New York, 1896. Page 100.

wards, their object probably being, so he supposed, to preserve the palace against evil spirits. \* In conclusion however, notwithstanding these finds in localities far distant from each other, we must add that too much importance should not be given to the mere fact, that substantially the same ancient symbols are found in many widely distant parts of the world. Not only is this a fact with certain symbols, but also in names, myths, traditions, weapons, customs and religions. Numerous analogies could be found on all these various points, which after all would prove to be of little value. As Dr. Brinton justly says, it would only tend to prove the similarity disclosed the world over by independent evolutions of the religious sentiment." †

## REMAINS IN ASH BEDS AT BALSAM LAKE.

BY G. F. LAIDLAW.

### FOURTH PAPER.

While investigating a number of ash-beds in various localities in this neighborhood this summer, three characteristic circumstances forcibly presented themselves, together with some minor details, viz:

1st. The entire absence of chipped flints, though occasional flakes and nodules are found.

2nd. The abundance of stone and pottery discs, as many as sixty appearing in one ash-bed.

3rd. The large quantity of bone implements and ornaments of excellent workmanship.

The minor details may be summed up as follows: The frequency of small marine shells, generally *helices*; the scarcity of stone celts; the occurrence of carbonized corn, acorns, plum pits, and the absence of stone pipes. Before commenting on these ash-beds, we might divide them into two classes. The first call "refuse heaps," as they are formed by carrying the ashes and debris from the dwellings and depositing them in waste heaps generally on the outskirts of the village. The second class consists of those ash-beds which were created by the undisturbed, and consequently not removed, debris from floors of the habitations or dwellings.

The first sort often measures up to thirty feet in diameter, and three feet deep in the centre, and are composed mainly of ashes in a loose condition, together with large quantities of broken pottery and bones, with very few whole implements or orna-

\* "Assyrian Discoveries." New York, 1875. Page 429.

† Op. Cit. 1896. Page 69.

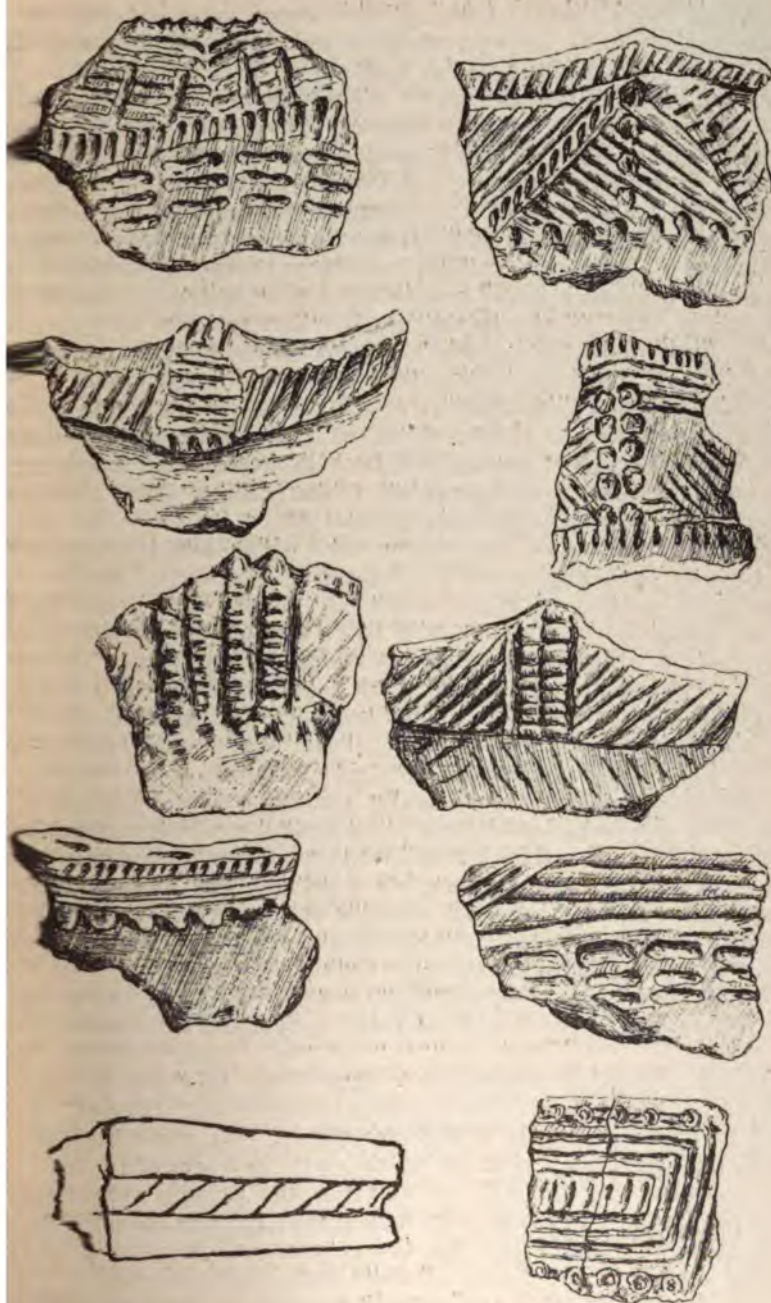


ments. On account of the looseness and friability of the component material, these heaps are very easy to examine, especially in the sifting process.

The second sort, of course, would naturally be the size of the dwellings that once created them, and not exceeding 15 or 18 inches in depth at the centre. Besides a thin layer of ashes, sometimes quite hard in the centre where the fireplace was, this sort of bed contained quantities of black humus, especially towards the edges, in which numbers of relics, both broken and unbroken, occur, together with the usual accompaniment of broken bones and pottery, jaws of animals, portions of deer horns, carbonized corn, clam shells and charcoal.

Seemingly, in most of these ash-beds the relics are found around the edge, as if it was customary to have a lounge or bench around the walls, underneath which it was the custom to keep their utensils and such implements and weapons as could be stored there. As to specimens, the bone and horn implements and ornaments rank first, consisting of awls, needles, both eyed and eyeless; so-called "buckles"; beads, or hollowed sections of bone of various lengths: perforated teeth of bears and wolves; boars' tusks ground to a lateral edge for a tool; beaver teeth ground to a cutting edge similar to a chisel; perforated bones from fishes' heads; skin dressers; pottery markers; arrow heads; deerhorn spikes ground to a point; tallies; bones showing evidences of cutting, scraping and boring; with an occasional weapon which would lead one to believe that there existed an affinity or tendency towards the Esquimaux—notably two examples: one a horn harpoon with two deep barbs on one side and a hole just immediately behind the second barb for the attachment of a cord, presumably used in connection with a float, as the base of the harpoon being wedge-shaped would be easily detached from the shaft. This weapon would be serviceable both in hunting beaver and in fishing; length 5-8 inches, by 3-4 inch broad and 5-16 inch thick. The other example is an inscribed bone dagger 10-12 inches long, 7-8 inch wide and of a triangular cross section. The inscription consists of a regular pattern of groups of short straight lines, divided as follows: Five pairs of upright straight lines, slightly inclined in opposite directions alternately, the individual lines of any pair being parallel to each other. The divisions thus formed contain horizontal parallel lines to the number of five in each of the two divisions nearest the butt, and four in each of the other two divisions. Both of these weapons display excellent workmanship and ingenuity. The surfaces have all been scraped over, then finally polished.

Besides the above mentioned bone implements and ornaments, a few of stone and clay occur, such as were used in the household economy, as mealing stones, hand hammers, celts de-



POTTERY FROM BALSAM LAKE, CANADA.

graded to hammers (but these do not occur very frequently), occasional rubbing stones, nodules and flakes of flint chert quartz and chalcedony, pottery and stone discs in large numbers, pottery ones predominating. These discs are of every size and in every stage of manufacture. They must have been largely used in some gambling games, a great number of them being very roughly finished, as if made in a hurry.

Clay pipes also abound, and resemble the types used by the Hurons to the west and other tribes to the east of this district.

By using a sieve one can get quantities of carbonized corn, beans, acorns, and in some cases what looks like edible roots, fish scales and bones, turtle bones and eggshells, bones of small birds and minor animals, plum pits, some being perforated. These latter may have been used to a large extent in a gambling game, descriptions of which have been given by the early explorers. Marine shells to the number of four or five varieties present themselves, such as a cowrie, a bivalve, a whelk, and a long, slender spiral. Nearly all of these shells are perforated or have their end ground off.

Among these relics are certain ones which may be classed as toys, or even miniatures for depositing in graves. For instance, on several occasions extremely small pipes occur, of which the bowls would not hold half a thimble full of tobacco. These are roughly made, no finish being put on them. Then again there are miniature celts, from  $\frac{3}{4}$  of an inch to 1 1-2 in length, that seem to be made from splinters of large celts. It is almost inconceivable to what practical use these could be put to, unless that of skinning small animals, by children, or for adorning the person, possibly emblems for burial purposes. We have also small discs and beads, both stone and clay, which could be used by children as well as adults. What is unmistakably a child's toy is a small clay pot 1 3-8 inches high and one in diameter, roughly made, with but little attempt at ornamentation, which consists of one circle around the neck and one around the shoulder, with a few tiny indents around the tip.

No wooden relics occur, though sometimes I have thought that smooth, charred pieces of wood may have been handles of tools.

Taken altogether, there is no appreciable difference in the relics from the various beds, for the same sites had been occupied by various peoples at different times. We must bear in mind, in summing up, that no relics showing traces of connection with the white man occur, and that the remains are those of a people more of a sedentary nature than hunters solely; and that, though probably not pre-Columbian, they existed prior to the advent of the French traders and Jesuit priests.

The disposition, size and relative position of the ash-beds enable one to determine the situation of each village, and

proximate number of its inhabitants. These ash-beds represent two classes of dwellings, one the "long house"

Huron-Iroquois peoples, and the other the oval or circular "wigwam" of the Algonquin tribes; the former often 40 in length by 10 or 12 broad, and the latter sometimes a diameter of twenty paces. Mr. A. F. Hunter, of Barrie, a man well versed in the exploration of the Huron country, designates the long ash-beds as Huron without a doubt, and the village sites of circular ash-beds to the camps of the

Algonquins in the Northwest at the present day, with the wigwam in the center and the remainder in an irregular circle, or two concentric circles around it. But in a very large number of cases these two varieties of ash-beds occur in the same village. Were the two people amalgamating, or was the long house evolved out of several circular habitations joined together for better defense and accommodation? This seems to be the fact, and the custom of each family in a "long house" having its special part of the house and a fireplace, was a survival of the time when each family had its own habitation.

"The Fort," Victoria Road, Ont., Oct. 25, 1897.

## ANTIQUITY OF WRITING.

*Scientific American* says: It is observed by Dr. Buhler in his work on Indian palæography, that a very remote period is indicated for the beginning of writing by the fact that in a Jain text of 300 B. C. its origin is forgotten and its invention attributed to the creator Brahma. Indian imitations of Greek inscriptions have proved that the Greek alphabet was employed in northern India before the time of Alexander the Great. Knowledge of the art of writing is established for the earliest Vedic period by one of the greatworks; and the grammarian Panini, assigned to the fourth century, mentions Greek writing in words signifying writer. The evidence of the canonical books of Ceylon indicates that the knowledge of writing was prehistoric; and passages in the Jataka and in the Maha Vagga indicate the existence, at the time of their composition, of writing on a wooden slate, such as is still used in Indian elementary schools. Writing, as a subject of elementary instruction, is still mentioned in an inscription of the second century before Christ. The palæographical evidence of the Asoka inscriptions early shows that writing was no recent invention in the third century before Christ, for most of the letters have several, very divergent, forms, sometimes nine or ten.

## THE GEOGRAPHY OF THE TSIMSHIAN INDIANS.

BY G. A. DORSEY.

The Tsimshian Indians form one of the most important stocks of the Northwest. They live in villages on the Nass and Skeena rivers and adjacent islands, and have as neighbors on the north the Tlingits, on the east the Dénés, and on the south the Bella Coolas and Kwakiutls. Their origin and early movements are still a matter of speculation. Their language separates them from the neighboring stocks, but in religion, folk-lore and culture they have much in common with the Tlingits, Haidas of the Queen Charlotte Islands, and the Kwakiutls. Their physical relationship with these stocks has not been determined, although some anthropometric data has been collected by Dr. Franz Boaz and by myself.

Owing to three chief reasons the life of the Tsimshians, as well as that of other Northwest Indians, has within the last fifty years undergone marked change. These reasons are: (1) The founding and rise of the city of Victoria, on Vancouver Island; (2) the establishment of Hudson's Bay Company's Posts and missionary stations, and (3) the establishment of numerous salmon canneries on the inlets and rivers.

The changes brought about by these causes may also be considered under three heads. First may be mentioned the change of physical status due to mixture with the whites and with other Indians; secondly, the change in culture due to white contact and especially due to the influence of missionaries, and, finally, the change in habitation due to the establishment of Hudson's Bay Company's posts, missionary stations and canneries. It is only with the last change, that of habitation, that we are here concerned.

While on the coast of British Columbia this summer, in the interests of the Field Columbian Museum, I gathered such information as I could relative to this point, and, while fully realizing the imperfection of the data collected, it seems to me to be of sufficient importance to be recorded. My information was obtained from various missionaries and traders, and from the reports of the department of Indian affairs. I am especially indebted, and take this opportunity of expressing my obligation, to the Rev. Mr. Tomlinson of Meamskinisht, a missionary who began his career of usefulness with Duncan at Metlakahla and who is acquainted with the Tsimshian dialects, and has resided in many of the Tsimshian villages on both the Nass and Skeena rivers.



Boaz\* has divided the Tsimshian stock into dialects, those speaking the Nasqá and those speaking the Tsimshian proper. Of those speaking Nasqá he enumerates two tribes; of the Tsimshians proper he enumerates six tribes. He does not specify, however, whether this enumeration refers to former times or today; at any rate I am unable to reconcile his list of tribes to present conditions. It is to be noted furthermore that the tribes speaking Nasqá are not confined to the territory of the Nass river, but are also found on the Skeena river. As to the distinguishing characteristics of the two dialects I had no time for investigation. But from various sources I learned that those tribes which spoke the Tsimshian dialect proper could not understand the Nasqá dialect, whereas the Nasqá tribes could understand those who spoke Tsimshian proper. It appears yet further that there are two closely related groups of the Nasqá dialect, the Nasqá and the Kitksa'n, the former group being confined to the Nass river, the latter to the Skeena river.

Instead of taking up the tribes or villages according to a linguistic basis I have preferred rather to follow the natural divisions and to take up first the Skeena river villages, and then the Nass river villages and finally the coast and island villages. It will be seen from a reference to the map that the villages are numbered from 1 to 18 and from A to H. The numbers refer to ancient or modern villages, which were founded without reference to white influence. The letters refer to villages founded within recent years through recent white influence. The capital letters N, K and T on the map are for the purpose of distinguishing the Nasqá and Kiksán tribes from those speaking Tsimshian proper. These numbers and letters are retained in the text. In the spelling of the proper names I have followed as a rule that given by the missionaries of the various towns or by the traders; in some cases I have inserted in brackets the spelling given by Boaz (B) or that given in the report of the Indian Commission (R).

One of the origin myths of the Tsimshians reports that after the flood their ancestors drifted about for a long time in a canoe and finally landed at Dum-lak-am (what will be a good place). Here they rested and this was their earthly primeval home. From here they began to extend outward in various directions and so was built up the Tsimshian people. Dum-lak-am, so far as can be determined, was the region about the modern town of Hazelton, one hundred and sixty miles up the Skeena river, and at this point we may properly begin our review of the Tsimshian villages.

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\*Franz Boaz: Fifth Report on the Northwestern Tribes of the Dominion of Canada, B. A. A. S. 1889. Page 8.

## SKEENA RIVER VILLAGES.

1. N. K. Kit-an-maiksh [Git-an-max R.] place for putting out net. Until 1879 this village was located on a flat just above the junction of the Skeena and Bulkley rivers. Shortly before that time the inhabitants had begun to build a little further up on a low bluff overlooking the Skeena where the present town of Hazelton now stands. The old village was destroyed by fire about 1876. The population of Hazelton, or "The Forks," as the town is commonly called, in 1881 numbered about 200, at present it numbers about 250. Many families have removed thither from Kishpiyeoux and from villages down the river. The town recently has become of considerable importance, as it is at the head of steamboat navigation on the Skeena. It contains a very important Hudson's Bay Post and is the distributing point for miners' supplies for the interior, especially for the Omenica country which has for some time been the scene of much mining activity.

2. N. K. Kish-pi-yeoux [Kits-pioux, Kits-piouse, R.] place of ancestor Pi-yeoux. This village, at the junction of the Kishpiyeoux and Skeena rivers, was in 1873 the most populous on the upper Skeena. At that time it numbered about 400 people, now it contains 225. Between 1881 and 1895 the population decreased about thirty-three per cent, much of this being due to successive epidemics of measles.

3. N. K. Kish-ga-gass [Kits-ge-gaas, Kits-ge-goos, R.] place of ancestor Ga-gass—on the Babine river, nine miles from its mouth. This village twenty years ago had over 300 inhabitants, but many have removed to Hazelton and many perished in the mines of Caribo and Omenica. Kish-ga-gass now numbers about 275 and is probably the most primitive of all Tsimshian villages.

4. N. K. Kaul-daw [Gal-Doe, R.] dwellers beyond. This village is doomed to utter extinction; numbering about 150 people in 1875, there are at the present time only about thirty who claim Kaul-daw as their home, and even many of these remain there only one or two months of the year. Many of the former inhabitants have removed to Kish-pi-yeoux. Within five years the village will be completely abandoned.

5. N. K. Kitze-gukla people of Zegukla mountain. This is the first of the Skeena river villages as we go toward the coast from Hazelton. In 1873 its population was about 250, but it is now about eighty. In 1875 many of the houses were burned from a conflagration which started on the opposite side of the river, caused by the carelessness of two miners. Much trouble and ill feeling grew out of this and the Indians attempted to close the river to navigation. The difficulty was not settled until a man-of-war appeared at the mouth of the Skeena.

6. N. K. Kit-win-gach [Kit-wang-agh, R.]—people of place of plenty rabbits. This village numbered about 250 in 1876, 200 in 1881 and at present about 150. Many deserted their homes during the gold craze on the Stickene river and suffered as the Indians usually do in contact with the whites under such circumstances. Many men died, and the women and girls were abandoned. Some of these women even took their daughters with them for the purpose of selling them to the whites.

7. N. K. Kit-win-skole [Kit-wan-cool, R.]—people where pass the narrows. This formerly extensive village, which numbered over 350 in 1875, has been nearly abandoned and now contains less than eighty people. Most of them have gone up to live at Hazelton, but many others left for the mines, while others still found ruin and death in Victoria.

8. T. Kit zilas [Gyits-alá-ser, B; Kit-sa-las, R.]—people of the cañon. Of this village, which numbered over 300 in 1875, but a single family remains. The head of this family is one of the crew of the S. S. "Caledonia" which runs on the Skeena. He lives in a neat modern cottage. All the other houses are in ruins and overgrown with vegetation.

9. T. Kit-zim-gay-lum [Kit-sum-kalem, R.; Gyitsumrālon, B.]—people of Zim-gay-lum river. Another almost deserted village; its population of 150 in 1885, has been scattered until at present not more than sixty remain. Many have gone to New Metlakatla, others have settled in Port Essington, while still others have joined the Kitksians.

#### NASS RIVER VILLAGES.

10. N. Kit-aix—? In 1870 Kit-aix, near the mouth of the Nass river, was a populous village, numbering over 350. At present it numbers about seventy-five. Many have joined the mission villages of Kincolith and a few have taken up their residence in Lak-kul-zap.

11. N. Lak-ungida (Haida name?)—This was one of the most populous villages in 1870 and numbered over 400, now there are not more than fifty remaining. Many died in Victoria, others have gone to the mission village Kincolith and a few went to Lak-kul-sap.

12. N. Kit-lak-aous—people on the sandy point. The remaining inhabitants of this village, which numbered 150 in 1890, deserted the place entirely in 1885. Where they went I was not able to learn.

13. N. Kis-themu-welgit—? This was never a large village and numbered but eighty in 1875, and now numbers about fifty. The chiefs removed to Victoria and a few have settled in the Nass river mission villages.



14. N. Kit win-shilk [Kit-win-tshilth, R.]—people place of the lizards. This village now numbers less than half of its 1870 population, which was 200. The death exceeded the births and many of the women, who were for their fair complexion, fine form and beauty, were lost to the world.

15. N. Kit-lak-damix [Kit-lach-damax, R.]—people of pond. This village numbered 350 in 1872, has at only about 150 inhabitants. It is hard to account for the decrease for there has been no special epidemic, nor have been any decided migrations to other villages. On the other hand this village is known to have received acquisition from Kit-win-skole.

### 3. COAST OR ISLAND VILLAGES.

16. T. Kit-kahta [Kit-kaa-ta, R. Gytga-ata, B.]—people of the poles. This was formerly a large village, numbered between 300 and 400 in 1870. Many have gone to Alaska to join Duncan's colony at New Metlakahtla, and the population has decreased considerably. It now numbers about 100.

17. T. Kit-khatla [Kit-katla, R.; Gyt-qā'tla, B.]—people of the sea. This village now numbers about 200 and is the most primitive and least often visited of the coast villages.

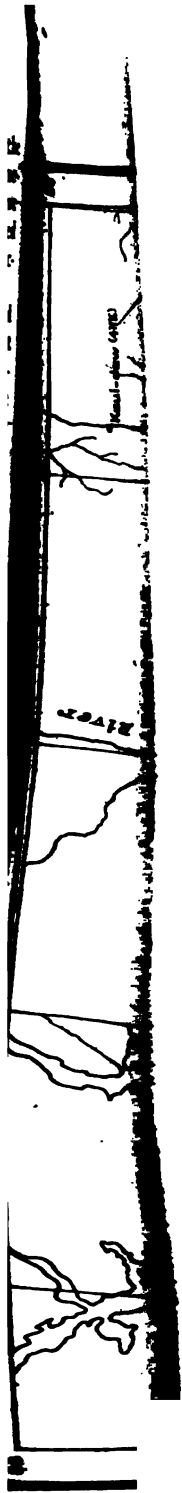
18. T. Kit-tizoo. [Gyid-esdzo, B.]—? This village, at the mouth of Milbank Sound, is the most southerly of all Tsimshian villages. It is now almost deserted, part of its population having gone to Alaska, others have settled at Bella Bella.

### MODERN VILLAGES AND MISSIONARY STATIONS.

A. Meamskinisht—foot of porcupine grove: Founded in 1889 by Mr. Tomlinson as a mission village. At the time it was numbered but five people, now its population is about 100, drawn from the Kitksans.

B. New Kit-zilas. This is not a mission village, but was settled by the people of Kit-zilas in 1893. Its population at present is about forty.

C. Port Essington. This town is second in importance only to Port Simpson. Although it was the seat of a Hudson Bay Post in 1835, it had its real beginning in 1872, when the gold excitement began in the Omineca country and the miners began to go into the interior by the Skeena river. In 1873 the Church of England mission was started and then the Indians began to settle there from various places on the Skeena but from the villages of Kit-zilas and Kitze-gukla. It now numbers about 200 inhabitants, has two churches, two sawmills, a cannery and a saw mill. It is also the starting place for the Skeena river steamer, and is destined some day to be a place of considerable importance.





**Matlakhatla.** The story of this mission village is the ce of the Northwest coast, and it has been told over and gain. Its history is a chapter in the life of a man who among the first of America's missionaries and teachers. in went out to Port Simpson in 1857 and removed to kahtla in 1862. With him went a few of the Simpson hians. Within six months the whole body moved over heir chief, Kit-laan. Of the rise and fall of this new Utopia we are not here concerned. Duncan left and d a new and brighter Utopia on one of the islands of rn Alaska, and Metlakahtla today is a ruinous monu- o the folly of a Bishop of England. Its population in was 150.

**Port Simpson.** The early history of Port Simpson or on as it is called on the coast, is the history of a Hud- Bay Company's Port. This post was first established in on the Nass river at a point about two miles above the t mission village of Kincolith. It only remained there ears but during that time seven of the traders died or ieir death at the hands of the Indians. Then the Post emoved to Port Simpson. At that time there were no is nearer than the peninsula of Metlakahtla. In that pas- t that time there were nine villages of Tsimshians who etained their summer homes on the Skeena river. Of nine villages I learned the names of six. The first was okalants; its chief was Legaik and he was the head chief entire Tsimshian nation. The other five villages were: n, Kinagingeeg, Kil-utsai, Kitadah, Kitzeesh. The ned population of the nine villages was about 5,000. have long since disappeared; many removed to Simpson, ie majority were scattered among other villages, slain in acial wars, lost in the gold fields of the interior, or per- in Victoria. Simpson at present is the metropolis of the dull and stupid in summer but awake and lively enough iter. It boasts of a hotel, fire department, hospital and val churches and salvation armies. Its population is over A half dozen totem poles mark the sites of the old s of the early days.

**Kin-colith**—place of scalp. This mission village was d in 1867 by Mr. Tomlinson. Its inhabitants were drawn the Nass river villages, chiefly from Gwin-wah. It now ers about 200.

**Lak-kul-zap** [Kach-als-ap, R.] Founded in 1872 by reen, from Tsimshians drawn from the villages of Kit- d Kitkahta; now numbers about eighty.

**Aiyaush**—eternal bloom. Founded in 1871 by Mr. nson. Its inhabitants were drawn chiefly from Kit-lak-. It now numbers 100.

## EDITORIAL.

## THE DIVISION OF THE PALÆOLITHIC AGE.

address of Sir John Evans at Toronto, an extract of which we have given in this number, makes it appropriate that we should give a history of the various palæolithic finds in Europe.

It was in the year 1715 that a palæolithic implement was discovered in connection with the skeleton of an elephant in the gravel of the Thames near Gray's Inn, London. This implement is preserved in the British Museum and closely resembles the implements found in the gravel at Amiens. While the exact position of this implement in the gravel was not at the time positively ascertained there can now be little doubt that man in company with extinct animals inhabited the valley of the Thames when great floods spread over the low plain upon which the greater part of London is built.

At a later locality in England, at Boxhoe in Suffolk county, flint implements were discovered by Sir John Frere in so "great numbers" that the workmen had emptied baskets of them in the ruts of the great road before becoming aware of their value.\*



*The Neanderthal Cave.*

They are perhaps the earliest relics found in the gravels. However, other relics found in the caves at a very early date. The exploration of caves had gone on for a long time before the discovery of human remains, though osseous remains of extinct animals had been discovered in great numbers.

The cave of Gailenreuth in Bavaria, were discovered at least 1700 years before bears and other extinct animals. Dr. Buckland calculated that 5,500 animals of the same species were there entombed.

This cave owed its deposit in a great measure to the action of water. No human remains were found in it.

In 1828 human bones and teeth, together with fragments of pottery, were discovered by M. Tournal at Aude in France. Bones of animals such as the reindeer, antelope and goat were also discovered. In 1826 Rev. J. McCulloch made some remarkable discoveries in a cavern at Kent's

formation consisted of stratified loam and gravel. The bed of the river was used for making brick as late as 1860. The gravel contained flint tools and fossil bones.

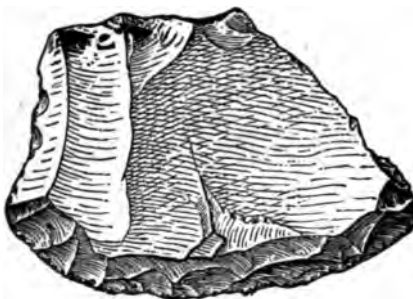
formation consisted of stratified loam and gravel. The bed of the river was used for making brick as late as 1860. The gravel contained flint tools and fossil bones.

Hole, but died before the account was published.†

No other discoveries were made until 1859 when the Brixham cave was opened. The relics found here excited so much attention that the Royal Society appointed several of its members to superintend the exploration. Among these were Sir Charles Lyell, Sir John Lubbock, Sir John Evans, Mr. Pengelly and Mr. Dawkins. Mr. Pengelly, recently deceased, was placed in charge.

The cave consisted in a succession of galleries, which were partly filled with gravel, bones and mud. At the top was a layer of stalagmite, fifteen inches thick. Below this the bone earth from one to fifteen feet in thickness which contained numerous mammalian remains, identical with those found at Kent's cavern. At the bottom was a layer of gravel in which some of the bones and relics were found. Mr. Pengelly thought that the deposits in the cave were owing to the transporting agency of water and since the deposit was made a valley of seventy-five feet in depth had been excavated.

The "Ilyenas' den" at Wookey's hole in Somerset was care-



*Mousterien Scraper.*

fully explored by Prof. Boyd Dawkins, who also explored the caves at Cresswell Crags and many other places. This cave was found to contain thirty-five specimens of palæolithic art in connection with the bones of 467 cave hyenas, fifteen cave lions, twenty-seven cave bears, eleven grizzly bears, eleven brown bears, seven wolves, eight foxes,

thirty mammoths, 234 woolly rhinoceros, 401 horses, sixteen wild ox, thirty bison, thirty-five Irish elk and thirty reindeer. The Victoria cave, in Yorkshire, yielded numerous remains of the mammoth, rhinoceros, hippopotamus, bison and hyena. Caves in North Wales yielded also teeth of the rhinoceros, horse and hyena but no human remains.

These caves were all in limestone but the palæolithic implements were confined to the lower strata which was separated from the upper by a continuous strata of stalagmite. These were all upon the British Isles.

The discoveries on the continent of Europe have been more interesting than those in Great Britain. As long ago as 1700 a skull of low type was exhumed at Constadt near Stuttgart.

† Kent's hole was found to contain the following strata and relics. It was about seventy feet above the bottom of the valley. The excavation was about sixty feet square. The contents were: (1) Roman pottery,

Wurtemberg, Germany, in association with extinct animals. German anthropologists have since given the name of the race to the race and call it the "Constadt race."

These discoveries were followed by others which were quite remarkable. They consisted of the finding of skulls and bones in connection with the bones of extinct animals as follows: the Enghis skull, in the valley of the Neuse, in a cave buried in breccia in company with many bones of extinct animals. The famous Neanderthal skull was brought to light in 1857, near Dusseldorf, in the valley of the Rhine. It was found in a cavern about sixty feet above the stream and about ten feet below the top of the cliff. The Enghis and the Neanderthal skulls excited a great deal of attention as they were supposed to prove two things. First that man existed a remarkably long time ago, and second that the primitive man was of very low grade.



*Mousterien Knife.*

The find which excited the most attention was in the valley of the Somme.

The discovery of the relics of man in the gravels, followed by the discovery of human remains in the caves, combined together furnished conclusive evidence of man's antiquity in Europe and gave rise to the opinion that the missing link would soon be found. The year 1857 was the date from which the discussion over the subject. From that time on, anthropologists have been busy looking for new evidence on these subjects, though they use the evidence furnished by previous ex-

posed bronze spear heads, polished stone weapons, bones of cows, and horses, and charcoal in a layer of dark earth; (2) flint implements, an awl, a needle with an eye, three harpoon-heads made out of reindeer's horn beneath the crust of stalagmite in a deposit of red earth about two feet thick; (3) fossil bones of extinct animals and a few implements in the breccia. The lower strata was found to contain bones of the mammoth, rhinoceros, ox, reindeer, cave lion, cave bear, and associated with them a number of worked flints, human remains.

plorations. Cave hunting became somewhat common. The history of cave hunting on the Continent is about as follows:

In 1828 M. Tournal explored a cavern in Bize in the department of Aude, southern France, and discovered human bones. In 1833 Dr. Schmerling of Liege explored the caves in the valley of the Meuse in Belgium and found human bones associated with those of the cave bear, cave hyena, mammoth, rhinoceros, horse, reindeer, red deer, roe and wildcat. His most remarkable discovery was that of the Enghis skull, which was covered with breccia five feet deep, associated with the bones of the reindeer, rhinoceros and horse. This skull is well formed. Dr. Huxley says of it, "there is no mark of degradation about it. It might have belonged to a philosopher or it might have contained the thoughtless brain of a savage." The Neanderthal skull was not discovered until 1857, nearly a quarter of a century later than the Enghis. It was thrown out of a cave near Dusseldorf in Prussia by some workmen who were quarrying in the rock. It was a mere fragment as the lower part of the skull was gone. Dr. Fuhlroot rescued this from destruction. After examining the locality and the bones deposited there, he decided that the Neanderthal man lived with the mammoth and other extinct animals in the drift period.\*

The cave of Aurignac was discovered in 1852. It was a grotto in a limestone hill near Aurignac, France. There was a large slab in front of the cave, but the vaulted recess was filled with human bones. These bones were, by the order of the mayor of Aurignac, buried in the parish cemetery and were not seen afterward. In 1860 M. Edward Lartet explored the grotto and discovered outside a layer of ashes and charcoal which contained burnt and gnawed bones of extinct and recent quadrupeds, rude hearthstones, numerous works of art, but no osseous remains of man. There were bones of the cave bear, brown bear, badger, cave lion, wildcat, cave hyena, wolf, fox, mammoth, woolly rhinoceros, horse, wild ass, wild boar, Irish deer, stag, roebuck, reindeer, and aurochs. These were obtained from the deposit outside of the cave. "They bore the marks of cuts pro-



*Cave at Aurignac.*

\* These two skulls, Enghis and Neanderthal, are described by Dr. Charles Rau in his articles on the stone age in Europe, and cuts illustrating the two are placed side by side, showing the contrast between them. Dr. Huxley pronounces the Neanderthal skull as "the most ape-like of the human crania yet discovered," but many others have decided that its brain capacity was large, though the retreating forehead, unusual thickness, and enormous ridges above the orbits, naturally place it among the skulls of a low grade.



duced by flint implements, some of them had been split open for the extraction of marrow." The conclusion reached was that there was a place where repasts were prepared and eaten, and where savage hunters feasted on the spoils of the chase," possibly observing funeral feasts. There is considerable uncertainty about this find as the bones of animals of different periods were so mingled together that the periods could not be distinguished. M. Lartet continued to explore the caves of southern France, and to him is due the division of the palæolithic age. It was in the valley of the Vézère and in the province of Dordogne that he discovered a series of caves which has given the names to the relics bearing certain shapes, as these



*Madalenien Scraper.*

were found to be associated with the bones of certain extinct animals, and found at varying depths, showing that they belong to different epochs. The caves and rock shelters forming the group are as follows: *Le Moustier, La Madelaine, Laugerie, Haute-Bassé, Gorge de Enfer, Les Eyzies* and *Cromagnon*. These stations were inhabited by man for a very long period during which the fauna underwent many changes. The relics also showed a succession of population. Flint continued to be used, but the articles showed a great variety of forms and sometimes a finish which assimilated them to neolithic implements. The people were ignorant of the art of grinding and polishing stone. The most delicate of flint articles were those used as



*Madalenien Graver.*

awls or piercers. Flint arrowheads were found proving that the troglodytes were acquainted with the use of the bow, and certain implements which were called hatchets, or "choppers," with a single broad convex edge and a thick back adapted to be held in the hand. It is supposed to have been used for breaking marrow bones. Barbed points were also used as harpoons or as lances, bone awls, needles, whistles, antlers, on which were drawings, on one a fish, on another a stag, on a third two running reindeer, on a fourth two heads of the

aurochs, on a fifth a human figure, an eel and two horseheads.

They only show what kind of people lived in the intermediate period between the age of the gravel beds and the age of the "pile dwellings and kitchen middens.

A few words must be devoted to the relics taken from the different caves. The cave at Hohlefels (hollow rock), which is really a rock shelter, was explored by Dr. Fraas in 1870 and found to contain several species of bear, among them the cave bear, and the bones of the reindeer, rhinoceros, wild horse, drilled teeth used as amulets, a full grown African lion, wrought articles used in skinning animals, flakes split from blocks of flint, and fragments of pottery vessels.

The cave of Mentone in southern France was explored by M. Reviere in 1872. Here the almost entire skeleton of a man was embedded twenty feet below the deposit. Many pierced shells and the teeth of the stag covered the skull as a chaplet. A bone instrument lay across the forehead and two spearheads of



*Solutrien Point.*

flint below the head and a flint implement in his hand, showing the same mode of burial as has been practiced by the American Indians.

In Germany, Austria and Hungary cave finds have shown diluvial layers with bones of mammoth, rhinoceros, cave lion and cave tigers at one period. The shelter caves, the reindeer, cave bears and diluvial horse at another period; no polished implements, no pottery or dog; other caves chipped stone implements and pottery, but no pottery is found with the extinct animals.

The "man of Spy" has interested the archæologists. This was a skull found in a cavern in the vicinity of Liege and described by Messrs. Fraipont and Lohest. There were three distinct ossiferous beds separated by layers of stalagmite, all of which contained the remains of the mammoth. The implements varied according to the depth. In the upper stratum they were of modern type, in the second stratum there were numerous hearths with burnt wood and ashes, implements of ivory with ornaments and a few fragments of pottery, and were associated with the bones of the rhinoceros, horse, mammoth, cave bear, cave hyena. Irish elk, reindeer, bison, cave lion. In the third or lowest of the beds the skeletons were found. They



were associated with the remains of the same animals but the flint implements were of the Mousterien pattern and were characteristic of later palæolithic times. There were two skulls, one of them of an old woman, the other of a middle aged man. Both of them were very thick with prominent eyebrows, low retreating foreheads, the lower jaws heavy, all of which are characteristic of an inferior and the oldest known race. They belong to the long-headed class. The bones indicate that they were small square shouldered individuals. They were powerfully built with strong, curiously curved thigh bones, so fashioned that they must have walked with a bend at the knees. A lower jaw of the same type was discovered in 1865 by M. Dupont at Naulette in the valley of the Lesse, in Belgium, also associated with the bones of the reindeer.

The discovery of skulls in the caves had been by this time numerous enough to furnish a classification of the races. They were as follows: (1.) The man of Constadt, whose skull was taken from a cave in Wurtemberg; (2) the Neanderthal man whose skull was found near Dusseldorf; (3) the Cromagnon race, whose



*Solutrien Knife.*

skull was discovered in a "rock shelter" in Dordogne; (4) the skull and skeleton found in the cave at Mentone; (5) the skull of the "man of Spy" described by Messrs. Fraipont and Lohest; (6) the skeleton found in Java, about which there has recently been so much discussion. We may say that this division of the palæolithic age according to the skulls or race can not at present be regarded as satisfactory for there are in several cases no relics associated to give an idea as to the stage of progress which was reached.

Cave hunting in Scotland has also resulted in the discovery of bone needles, harpoons, pebble hammer stones, flakes and scrapers, which prove a connecting link between the palæolithic and neolithic ages; the mammoth, rhinoceros and reindeer are associated with the first, the present fauna with the last.

The discoveries at Caddington, England, threw new light upon the ancient subdivisions of the palæolithic age in Europe. Mr. F. G. Smith watched for six years the brick kiln pits and found what he calls a palæolithic floor on which rested a stone blade work-shop of pleistocene age; the blades more or less finished, the chips and tools lay just as the post glacial workman had left them. Here were blocks of raw material, flint nodules, oval flint pebbles, large flint masses called anvil stones, stalactite

shaped nodules called punches, fabricators of nicked flint used for flaking, cores from which flakes had been worked by careful blows and by smashing, several piles of selected flakes, showing that here was a workshop that had been overspread by the overlying drift material. Also at Crayford, England, Mr. F. G. Spurrell found a stone workshop of Pleistocene age under drift gravel.

There are many facts to prove that palæolithic man occupied caves through successive periods of time, and that there were geological and climatic changes. Among these and not the least, is that during the last year there have been discoveries in the Pyrenees and Phœnicia, in Finistere and other places which extend the territory occupied by palæolithic man and which show that he was at one time connected with extinct animals in all these countries. Judging by the address of Sir John Evans the same is true in India though there are many links to be supplied. As to the division and classification of the ages according to the relics we may say that is too well established to be overthrown. There was a rude stone age in Europe, this was followed by the polished stone or neolithic age and that by the bronze. But the subdivision of the palæolithic age according to the relics is much more difficult for the the relics are so much



*Harpoon from Cave.*

alike and shade into one another, that it is impossible to separate them except as their history and full description of the finds are given, still the best method is the one which combines the two, classifying the relics according to the animals found in the caves as well as according to the character of the relics. The Germans have divided it according to the skulls or the races which the skulls indicate. The English have made subdivisions to depend upon the relics though they are not united, as some, among them the famous geologist Prestwich, make a wide division between the palæolithic and neolithic age and recognizes a period of submergence between the two ages, while Mr. Brown and some others believe the two to be continuous but make subdivisions. For the present, the French division is the most useful especially as it identifies the varying stages of human culture, the changes in climate and vegetation as well as in animal life.

It appears that Europe underwent great changes during the palæolithic age. At one time the climate was warm and vegetation rank. The continent was occupied by animals which are found now, only in the torrid region, mainly in Africa, such as the hippopotamus, rhinoceros and hyena. Afterward it changed

so that the climate was colder than at present and animals which are found only in the arctic regions were abundant. Among these may be mentioned the reindeer, the musk, ox and cave bear.

Classification of the relics which have been ascribed to the different epochs of the palæolithic age have been given by various authors, Sir John Evans, M. Joly, Thomas Gilson, M. de Nadaillac and many others, each one varying in his account according to the locality or country in which he lives, though the French divide the palæolithic age into the following epochs † marked by the bones of extinct animals and different classes of relics: (1) Epoch of St. Achuel, valley of the Somme, distinguished by almond shaped axes and by the bones of the mammoth. (2) Epoch of Moustier, cave in Dordogne, distinguished by scrapers and triangular lance heads, and the great cave bear. (3) The epoch of Solutre, a station at Saone et Loire in Switzerland, distinguished by flint spear heads and by angular maces and the bones of the reindeer and mammoth. (4) Epoch of Aurignac, a station in Haute Garonne, east of France, distinguished by bone implements, arrows and spear heads fashioned from the antlers of the reindeer. (5) Epoch of La Madelaine, cave in Dordogne, distinguished for the presence of numerous works of art carved or engraved upon stone or bone, and the abundance of the bones of the reindeer. This is the division of M. de Mortillet.

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† See articles by Dr. Charles Rau in Harper's Monthly entitled, "Stone Age in Europe," also "Man Before Metals," by M. Joly.

In conclusion we take from the address of Sir John Evans the following summary:

Some may be able to call to mind the excitement not only among men of science but among the general public when, in 1859, the discoveries of M. Boucher de Perthes and Dr. Rigollot in the gravels of the valley of the Somme, a Abbeville and Amiens, were confirmed by the investigations of the late Sir Joseph Prestwich, myself and others, and the co-existence of man with the extinct animals of the Quaternary fauna, such as the mammoth and woolly-haired rhinoceros, was first virtually established. It was at the same time pointed out that these relics belonged to a far earlier date than the ordinary stone weapons found upon the surface, which usually showed signs of grinding or polishing, and that in fact there were stone ages in Britain. To these the terms "neolithic" and "palæolithic" were subsequently applied by Sir John Lubbock. The excitement was not less when, at the meet-

ing of this association at Aberdeen in the autumn of that year, Sir Charles Lyell, in the presence of the priggish consort, called attention to the discoveries in the valley of the Somme, the site of which he had himself visited, and to the vast lapse of time indicated by the position of the implements in drift deposits a hundred feet above the existing river. The conclusions forced upon those who examined the facts on the spot did not receive immediate acceptance by all who were interested in geology or archæology, and fierce were the controversies on the subject that were carried on both in the newspapers and before various learned societies. It is at the same time instructive and amusing to look back on the discussions of those days. While one class of objectors accounted for the configuration of the flint implements from the gravels by some unknown chemical agency, by the violent and continued gyratory action of water, by fracture resulting from pressure, by rapid cooling when hot, or by rapid heating when cold, or even regarded them as aberrant forms of fossil fishes, there were others who when compelled to acknowledge that the implements were the work of men's hands, attempted to impugn and set aside the evidence as to the circumstances under which they had been discovered. In doing this they adopted the view that the worked flints had either been introduced into the containing beds at a comparatively recent date, or if they actually formed constituent parts of the gravel then that this was a mere modern alluvium resulting from floods at no very remote period. In the course of a few years the main stream of scientific thought left this controversy behind, though a tendency to cut down the lapse of time necessary for all the changes that have taken place in the configuration of the surface of the earth and in the character of its occupants since the time of the palæolithic gravels still survives in the inmost recesses of the hearts of not a few observers.

Many, however, have at the present day got over this feeling, and of late years the general tendency of those engaged upon the question of the antiquity of the human race has been in the direction of seeking for evidence by which the existence of man upon the earth could be carried back to a date earlier than that of the Quaternary gravels. There is little doubt that such evidence will eventually be forthcoming, but, judging from all probability, it is not in Northern Europe that the cradle of the human race will eventually be discovered, but in some part of the world more favored by a tropical climate, where abundant means of subsistence could be procured, and where the necessity for warm clothing did not exist.



THE AGE OF THE WORLD AND THE AGE OF  
MAN.

One of the most interesting topics which present themselves to the thoughtful mind is the contrast between the age of the world and the age of man. This is not apparent to all for the common impression is that man was not only contemporaneous with the animals and plants which surround him but that his history is in some way connected with all the scenes of nature and that his ancestry dates back to the beginning of things.

Occasionally the traveller will come into the midst of scenery which is so lonely and yet so grand that he feels insignificant in the presence of these primeval works of God. The astronomer gets this impression as he looks out from his little observatory through his far reaching eye, and watches the motions of the planets and stars. His thought is that worlds upon worlds must have rolled in space long before man came into existence. The only being who preceded them is God. The geologist as he views the rocks is impressed with their age, going back as he does to the archæan rocks, into the Azoic age and building up his column he recognizes the changes which occurred before man came. He sees where life was first introduced and through what stages it passed before the plants and animals which are common now had any signs of existence. The prophetic types may have appeared early but no one except the Omniscient being could then have anticipated man who is the crowning work of all. The botanist and zoologist recognize the progress of creation in the history of the plants and animals, especially if paleontology is taken into account. The physicist who studies the laws of nature and dynamic forces realizes the eternity of matter and occasionally gets the sense of the age of the world and the grandeur of Creation.

The archæologist, however, while pursuing his special study, gets no such sense of either the antiquity of man or the age of the world. Archaeological is very different from Astronomical or geological time. Various figures have been given which are based upon the combined evidence of the different sciences but they seem to be mere calculations like the figures of a difficult problem, the numerators are placed along the line merely to puzzle the student. To man may be given 10,000 years or 100,000 years it makes but little difference when we count the ciphers in the line which gives the age of the world.

The only way for the anthropologist to realize the difference between the age of man and the age of the world is to enter into comparative science. The broader the vision the stronger the impression. The study of scenery has however the same effect when the eye has been trained in this school of science. To the ordinary observer scenery is dumb. It appeals to only one sense, that of sight. It is like music when it appeals only to the sense of hearing and makes sound its only vehicle of thought. Music without words uses only the sense of sound, so scenery without science uses only the senses.

The story of creation is written upon the rocks. There are temple domes which were slowly lifted to their heights by the processes of creation and then their exterior surface was carved and polished by other great forces of nature, ice and water, which took many thousand years for these forces to wear away the roughness of nature. Much of the flooring of earth has been laid by the ice hand which extended to the south carrying material for pavements and filling in the spaces with the sand and gravel which had been ground out of the rock.

The fountains which play in the "garden of the gods" owe their streams to the forces which are hidden far beneath the earth where the pressure and friction of the rocks produce great heat and the pulsations of nature are felt. If we apply the mythology of the Norseman for our guide we might think that these were the pulsations of the "great giant," whose age is unknown.

#### ARCHÆOLOGICAL NOTES.

*Sir Peter Le Renouf* who has been so well known as the leading Egyptologist of Europe died October 22, 1897.

He was keeper of the Egyptian Antiquities of the British Museum, Pres. of the Society of Biblical Archæology, lecturer in the Hibbert lecture course, editor, and Translator of the Book of the Dead and the author of many works and essays.

KING DAVID'S TOMB. Clement C. Ganneau has an article in the *Athæneum* for September 11, 1897, claiming that he has pointed out the probable place of the tombs of the kings at Jerusalem but that Dr. Bliss had dug his trenches on the wrong side and so failed to discover King David's tomb.

PREHISTORIC MUSICAL INSTRUMENTS. A party digging in California has recently come upon skeletons which were removed afterward. But careful digging with a knife in the soft sand soon resulted in the uncovering of three musical instruments, or flutes, showing that evidently the musician of the tribe had been discovered. They were the leg bones of the deer, found on the mainland forty miles away, and were evidently highly treas-



ured by the owner as they were ornamented with pearly iridescent plates cut from the haleotis. The flutes which are now in Mr. Plumb's collection at Islip, Long Island, were about eight inches in length, perforated with four or five finger holes, while the largest end was covered with asphaltum, into which was set the square or oblong piece of pearl, evidently selected for its beauty and luster.

**HASKELL MUSEUM IN CHICAGO.** Dr. W. Flinders Petrie, the Egyptologist sent, according to the daily papers, to Dr. Breasted of the University of Chicago, a valuable collection of relics excavated along the Nile. Among these are statues of Nen Khefra, a wealthy nobleman, and his wife, which are said to be nearly 5,000 years old. They are of limestone and are remarkably well preserved. They will go to the Haskell Oriental Museum of the university.

**DOMESTICATED DOGS IN PERU.** Prof. Nehring, in describing the domestic animals of the ancient Peruvians, states that the subject is scientifically important, because all the other peoples of ancient America were very poor in this kind of property as compared with the Peruvians and some of the Central American peoples. Nehring examined eighteen dog mummies from old Peruvian graves and ascertained that they belonged to three different races—a shepherd's dog—a daschund—and a bull dog. This discovery is interesting, as it shows the influence of domestication on the formation of races.—Scientific American.

**CANNIBALISM IN ANCIENT EGYPT.** Prof. Flinders Petrie is now exhibiting the result of the explorations he made last winter at a spot called Deshasheh, on the Nile, about fifty miles south of Cairo. He was fortunate enough to come upon a group of tombs which date as far back as the fifth dynasty, about 2500 B. C. In these he found rude coffins with bones in them, but no mummies; an earlier form of burial had been in existence, in which the bodies were cut up, the flesh entirely removed, the bones carefully wrapped up in cloth and placed in the coffins. The professor comes to the conclusion, based upon statements by Herodotus, Strabo, and other authorities, that the flesh had been cooked and eaten as a sacred rite in connection with the dead. With the Massagetae, when a man reached an old age, it was considered to be a happy and honorable death to be sacrificed and eaten; and it was looked upon as a great misfortune to die before being entitled to this distinction.—Scientific American Supplement.

**RUINS IN NEW MEXICO.** The Bulletin for the Geographical Society contains an article by U. Francis Duff on "The Prehistoric Ruins of the Rio Dolorosa," in the western part of Socorro County, New Mexico.

From the head of the river to the Box Canon he counted seventy-eight ruins on the southern bank and sixty-nine on the northern bank. The houses, built of stone set in adobe mortar, varied from a single room one story building to structures three

or four stories high and containing from one hundred to two hundred rooms.

Great care was exercised in the selection of the building sites: the top of a little promontory or little elevated flats in the river valley out of reach of the water.

The rooms varied in size, some of them nine feet by six feet others eighteen feet by twenty feet.

A vast number of relics has been gathered from these houses. The singular custom of burying their dead beneath the floors of the rooms prevailed. When the bodies were placed on the floor, fresh earth was carried in and stamped down hard and a coating of mortar spread over it and the room occupied as before. Their great reverence for the dead was exhibited in this way.

The specimens of pottery are of five kinds, black and white, black with red decoration, corrugated, smooth bowls with black lining and a plain red variety.

NUMISMATICS. R. C. Temple, the editor of the Indian Antiquary is publishing a series of articles on coinage in India and the far East. He says: "I found soon after my arrival in upper Burma in 1887 that great interest attached to the coinage and the origin of the currency as no coinage, properly so called had existed before 1861. I was therefore living among a people of considerable 'civilization' who had but recently been introduced to the use of coins.

Admirably as Evans, in his "Coins of the Ancient Britons" nearly forty years ago, as Keary in his "Morphology of Coins," in 1886, as Prof. Ridgeway in his "Origin of Metallic Currency and Weight Standards," as Terrien de la Couperie in his "Catalogue of Chinese Coins in the British Museum," and others have illustrated by induction how currency must have preceded, and led to coinage, no person has heretofore had the opportunity of studying "on the spot" the whole proceeding of a people in the act of passing from one stage to another and witnessing "a sudden and complete change from the weighing of bullion to regular coinage."—Indian Antiquary, Sept. 1897.

## BOOK REVIEWS.

*Glaciers of North America.* By Israel C. Russell. Ginn and Company, Boston, 1897.

The subject of American scenery is again brought before us by a book. This time it is ice, rather than water, that has had the effect of molding the surface—ice in the shape of glaciers. There are three kinds of glaciers, Alpine, Piedmont and Continental. Alpine glaciers occur upon the sides and summits of mountains, the Piedmont are found at the base of mountains and resemble lakes into which streams have flowed, Continental glaciers are of vast extent and form an ice covering for entire continents, which were laved by great seas.

There are three parts to glaciers, 1, snow fields, 2, that formed by the granular snow, called *neve*, 3, that formed by ice, which is the glacier proper.

There are many signs of the effect of glaciers in regions from which they have retired. These are as follows: First, the worn and striated rocks. Second, moraines, which may be divided into three classes, lateral, terminal, and ground. Third, there are also various hills and ridges, which owe their peculiar forms to the action of glaciers.

The abandoned paths of great glaciers are sometimes marked by long ridges, smooth oval hills of unstratified drift, some of them in the shape of whalebacks. These are called *Drumlins*.\* They are very common in certain regions in the Mississippi valley. In formerly glaciated regions there are tortuous ridges composed of water worn sand and gravel, which are called *Osars*.

In other localities smooth contoured hills and irregular hills of stratified drift with basins between are seen. These are called *Kames*. Associated with *Osars* and *Kames* are broad plains of sand and gravel deposited by glacial waters.

The most interesting deposit is that which is called *till*. It is the direct product of the grinding up of the rock by the glacier and varies in character with the rock from which it is derived, from a compact boulder clay to a more or less sandy loose soil with boulders and stone fragments scattered through it.

The changes in topography produced by glaciers are of two kinds; those produced by moving ice masses which cut away prominences and smooth out inequalities and those which are formed by the deposits and tend to increase the relief of the surface. Among the latter may be mentioned the following: undrained basins, numerous lakes, long winding gravel ridges, tumultuous hills, broad sloping gravel plains, boulders perched on hill-tops, striated stones, outcrops of rocks with smooth and rounded contours.

As to the existing glaciers in North America and their distribution, the author of this book has spoken clearly. He says they are confined to the Cordilleran mountain series and to Greenland. The Cordilleran series is a family of mountains which extend from Cape Horn to the Aleutian Islands, a distance of over 7,000 miles.

The southern limit of glaciers is in the high Sierras of California. They are more numerous in Oregon, Washington and the Coast Range in Canada.\* The best examples cluster about the summits of Mount Shasta, Mt. Ranier and Mt. Baker and in the Selkirk mountains. The illustrations of these different mountains and the glaciers upon their summits are given in the plates, which are very beautiful, and show to us what grandeur there is in mountain scenery, and how important an

\* The frontispiece, which contains cuts kindly furnished by Silver, Burdett & G'o., illustrates these points.

element the ice is in forming that scenery. The plate which shows the action of the ice in the past is one which illustrates the morainal embankments, found in the Mono Valley, California.

That which best illustrates the present action of the ice, is one which represents the Illecellewaet glacier of Canada. Here the glacier is about the higher peaks, descend into the deep green coniferous forests and produce striking contrasts of color. The black rocks, the green trees, the white foaming waters, and the glistening ice, all serving to heighten the grandeur of the scenery.

The glaciers of Alaska have some very remarkable features. The following is a description of the Taku glacier:

"The color of the fractured and cleft ice-cliffs is as varied and beautiful as their ever changing forms. In the deeper recesses the light issuing from the interior is the darkest ultramarine, so deep that it appears almost black in contrast with the brilliant outer surface. In the full glory of an unclouded summer day the scene becomes resplendent with the reflected glories of the sea and sky. The ice cliffs blaze and flash in the sunlight until one can scarcely believe that it is an everyday, earthly scene that meets his admiring gaze. The observer to whom such wonders are novel may well fancy that the picture before him is but the fantasy of a dream. One is awakened from such reverie, however, by a crash like the roar of artillery, when an avalanche falls from the cliffs of light and is engulfed in the turbid waters below. The white foam shot upwards by the avalanche, rises high on the icy precipice, and perhaps dislodges other tottering pinnacles, which reawaken the echoes in the neighboring mountains. After each crash, created waves, starting away from the scene of commotion, set numerous bergs rocking, and break in lines of foam on the adjacent shore."

*The Ancient Hebrew Traditions as Illustrated by the Monuments.* A Protest Against the Modern School of Old Testament Criticism. By Dr. Fritz Hommel, Professor of Semitic Languages at the University of Munich, E. and J. B. Young & Company: New York. Society for Promoting Christian Knowledge: London, 1897.

It is a cardinal article of belief among modern critics of the Pentateuch, that the Hebrews of pre-Mosaic times were uncivilized nomads, whose religion consisted in the worship of ancestral heroes and the adoration of stones, springs and animals; in other words a mixture of fetichism and totemism. The evidence of the inscriptions proves more and more clearly that they or their ancestors, were as early as about 3000 B. C., more or less in contact with the two great centers of primitive civilization and that after the settlement on the shores of the Mediterranean, Babylon must have exercised a civilizing influence of the most marked description, and that the "countries of the west" were at one time politically dependent on Babylon and that there was a Babylonian invasion. We come in the beginning upon the mighty Priest-King Geuda, who procured for his building operations, boxwood from Mt. Amanus, alabaster from Tidanum (Dedan), cedars from Lebanon.

In addition, there was another region which owned his sway in the great Arabian peninsula, from which he obtained copper, wood, iron, and gold-dust. We can now understand the part played by Arabia in the ancient Babylonian epoch of Nimrod or Gisdubar, dating from about 2000 B. C.

In the Ninth Canto we are told how Gisdubar set out for the land Mesha (Central Arabia), the gate of which was guarded by legendary scorpion men.

We possess an extremely interesting document dealing with this period, of which extracts and important facts were preserved in the library of Sardanapalus.

According to this work, the Kings of Akkad were in Northern Babylonia, while the "Kings of Ur" exercised rule over Sumer, known



as Chaldea, over a part of Elam, and in addition all the "countries of the west." Their neighbors were the independent kings of the "country of the sea," on the Persian Gulf. Moreover a large number of Babylonian sacrificial lists recently discovered enable us to establish the fact that before the time of Abraham the whole of Syria, Phœnicia and a great part of Arabia, were under the direct influence of Babylonian civilization, an influence the permanent effect of which can hardly be overestimated. There is no mention made of Egypt, but Dr. E. Glaser, the Arabian explorer, in his learned and epoch making work, "A Sketch of the History and Biography of Arabia," draws attention to the fact that the name *Kush* was originally applied to Elam, was afterwards given to various parts of central and southern Arabia and that northeast Africa must have been colonized by the Elamites, and the Cushite languages, of northeast Africa were analagous to the early Egyptian and Semitic tongues, and resembled closely in syntax the Ural-Altaic languages of Asia.

It is stated on the Egyptian records that in the time of the Twelfth Dynasty about 2200 B. C., a new race made its appearance on the Egyptian horizon.

This carries the date of the Minaean inscriptions back of the Exodus, and places them among the most ancient records, where Dr. A. H. Sayce places them. Prof. Hommel ascribes them to a later date 900 or 1000 B. C. He says, however, in southern Arabia we come upon traces of a very high civilization at a very early period. Evidence of this is, supplied by the ruins of ancient cities, towns and aqueducts, and above all, by the numerous inscriptions which still survive. These latter are written in an alphabet which belongs, at the very lowest estimate, to the same period as the so-called Phœnician alphabet, and must therefore be referred, together with the Phœnician, and the Greek alphabet, which is derived from it, to one and the same source, viz: the western Semitic alphabet, the structural source of which has not yet been made out.

Glaser refers the earliest of these inscriptions to the earliest of the Hyksos period. Mr. Hommel argues from the character of the gods, that they are later. The names Ashtar, the Ascendant, apparently the morning star, though originally borrowed from Babylon and identical with the god Ishtar is nevertheless always represented as a male deity and set opposite to Irad, and so we have an Arabian counterpart of the hostile brothers *Marduk and Nergal (Osiris and Set)*. Yet in spite of all this we scarcely find anything but *Ilu* god in the Minaean personal names. This name is frequently written with the suffix thus: *Ilinu*. "Our God."

The religious significance of the name system is as important as any interpretations of belief for we are likely to carry back our own beliefs or ascribe the beliefs of a later date to the earlier period.

Some of the names appear to have been borrowed from the Canaanites. This is very important if true, for Abraham's migration from Chaldea would assume a totally different complexion, as Amraphel, the king of nations, was of the same nationality and spoke the same language as Abraham and his followers. The Hebrew and Canaanite were practically convertible terms. Dr. Sayce points out that not only his personal name, Abramhu, is found in Babylonian contract tablets, of Kham-mura-bi epoch, and Pinches has also discovered the names Yazqubilu (Jacob-el). The name *el* and *ilu* signifying god as in the name Beth-el (the house of God). There were therefore Hebrews living in Babylonia at the period which the Old Testament assigns to the life of Abraham. But when Abraham was born in Ur of Chaldees, a dynasty was ruling there judging from the names Khammurabi, Ammi, Saduga, which was not of Babylonian origin but belonged to a race which was at once Hebrew and South Arabian. Could there be a more remarkable confirmation of the statements which we find in the tenth chapter of Genesis, "Unto Eber were born two sons, the name of one was Peleg, for in his days was the earth divided and his brother's name was Joktan.

The sons of Joktan were Ophir and Havila and their dwelling was from Mesha, as thou goest unto Sephar, a mount of the east.

The ancestor of the Hebrews, the ancestor of the tribes of South Arabia, the ancestor of the Elamites, of the Assyrians Asshur, of the Arameans, Haron, and of the Lydians, or Lud, was Shem, in other words they were all Semitics. The parallelism between the biblical accounts and the latest discovery of archaeology is thus complete and makes it impossible to believe that the biblical narrative could have been compiled at the late date to which our modern critics assign it.

The fourteenth chapter of Genesis is in many respects, one of the most remarkable in the whole of the Old Testament, containing as it does the account of an Elamite campaign against Sodom and the consequent liberation of Lot which formed an episode in the history of Abraham. Its real interest lies in the fact that in this chapter we obtain a glimpse of the general history of the world in the twentieth century B. C., such as is no where vouchsafed us as in the Bible. In it we catch sight of a political background instinct with life and movement, and full of the deepest human interest, the more important details of which are now being confirmed and amplified in the most remarkable manner by modern research and explorations in the territory of ancient Babylonia.

The description of Melchisedec, who was king and priest without father, without mother, is important for epithet "without father, without mother" was applied to the ancient priest-king. The Tel-el-Amarna tablets contain the assertion, "it was not my father who installed me in this place or my mother but the arm of the mighty king has allowed me to enter my ancestral house.

*The Ruins and Excavations of Ancient Rome.* By Rodolfo Lanciani, LL.D., D. C. L. Boston and New York: Houghton, Mifflin & Co., 1897.

This is one of the most thorough and comprehensive of all the works which the distinguished author has written. It is also published in a style which will be most serviceable, as well as attractive.

It begins with a description of the geology, climate and natural scenery of the ancient city, including the Tiber with its bridges, and the cloacæ, or drains. It treats also of the quarries, the brick kilns, the aqueducts, the walls, gates, covered ways, fortifications, buried houses and temples, all of which are splendidly illustrated by engravings. One of the most interesting of these is a representation of the stem of the ship of Æsculapius. This was built of travertine, and measured 280 meters between the perpendiculars, with a beam of 76 meters, with an obelisk that represented the mainmast. There is also a bronze head found in the Tiber, and a statue of marble, which was recovered from the same river in good condition. It is an archaic Apollo, and very beautiful.

The covered way of the walls of Aurelian, and the remains of a private house discovered under the baths of Caracalla, are represented by fine engravings.

The headless statue of Cybele, found near her temple on the Palatine; another headless statue of a muse, discovered in the so-called Stadium; and still another, of the Venus Genetrix, by Arkesilaos, are beautifully illustrated. The finding of the bronze statue of Hercules Magnus Custos, the statue of a shepherdess discovered in the Horti Vettiani, the bust of Commodus, the statuette of a girl from Horti Lamiani, and a statue of Pompey the Great are all finely illustrated. The houses and palaces on the Palatine Hill are contrasted with the hut-urn from Alba Longa, which represents a prehistoric hut modeled from nature by an Alban shepherd, about the time of the foundation of Rome. The foundation of the hut, in which Romulus and Remus found shelter and food and received their early education, is still in existence. This proves the reality of the story, which has by some been pronounced a mere myth.

The house of Augustus, which stood upon Palatine Hill, and was covered with masterpieces of Greek, Tuscan and Roman art, was ruined in 1775 by a vandal, Abbe Rancoureuil, who sold even the bricks and stones, though a plan of the ruins was secured by a young man, a Roman archæologist. All that remain now are a few bare walls and three underground rooms of graceful design, which contain frescoes of Cupid showing the arrow to Venus, Venus lacing her sandals, Jupiter in the form of a Satyr pursuing Antiope. These show the taste and luxury embodied in the palace.

The house of Tiberius has also been excavated and a plan of it given, as well as of the remains of the palace of Caligula. The latter seems to have been a building of several stories. The forum of Trajan was surrounded by a double colonnade, and the porticoes were crowded with statues of eminent men, with an account of their career engraved on their pedestals.

Ammianus Marcellinus describes the impression felt by the Emperor Constantius at the first sight of the group, which he describes as the most marvelous creation of human genius.

Many of these valuable historical tokens have already been discovered.

The heads of animals discovered in the Forum of Trajan are also illustrated by an engraving. The portrait of the bust of Scipio the elder is also given. It is marvelously life-like, and brings the renowned conqueror of Carthage close to view. The remains of the Castra Pretoria, which dates back to before the time of Constantine, and which figured conspicuously in the reign of Augustus and of Tiberius, are represented by an engraving. This brings us back to the time when the Roman state was practically in the hands of the Pretorians, and Rome was filled with bands of savage-looking men, speaking unknown languages and of uncouth and barbarous manners. A "winged victory" from this castle or fortification or palace, whichever it may be called, is also illustrated, as are the Pantheon flooded by the Tiber, and the Arch of Marcus Aurelius. The impression formed by reading the book and examining the cuts, is that there was a magnificence about the ancient city which has not been equaled by any modern city. The magnificence was ephemeral, but not so ephemeral as are the modern structures in some of the American cities, for these are destroyed and others are built in their places, and in the course of fifty years several complete changes are effected, while in the ancient city five hundred years and even more elapsed before the revolution or reconstruction were so marked.

*The Bible and the Monuments. Primitive Hebrew Records in the Light of Modern Research.* By. W. St. Chad. Boscawen, F. R. H. S. Eyre & Spottiswoode: London and New York, 1895.

Mr. Boscawen is one of the best known archæologists of England. He has explored the monuments of Great Britain and written upon the subject. In this book he has, however, drawn from the explorations of others as well as his own, and refers frequently to the discoveries which have been made by Mr. Bliss in Palestine, Mr. George Smith in Babylonia, also to the discovery of the tablets from Tel-el-Amarna, but his book was published too early to include the discoveries made by Dr. Peters and Prof. Heilprecht. The publishers have very wisely illustrated the book by a series of plates which give the reader a view of the tablets, seals, statues, "boundary stones," weights, idols, bronze figures which are extant. By this means we can compare the symbolism of Egypt with that of Babylonia, the early symbolism of Chaldea and the later writing and symbols of Assyria, though the author confines himself to the cuneiform tablets, for his studies have been in the direction of deciphering these inscriptions. It is interesting to look through the book and see the many analogies in the symbols of the world; for the "eagle-headed" figure from Babylonia reminds us of the "eagle-



man," or "man-eagle" discovered in the mounds of Georgia, and the sun symbol on the tablet of the sun-god of Sippara is very similar to that found in Egypt. The cuneiform writing, however, is, as would naturally be expected, confined to the province of Babylon; though the few specimens found in Egypt and Palestine are suggestive of a widespread correspondence and a very extended acquaintance with the language throughout the civilized countries of the East.

The object of the book is to show that the history of the Hebrew people, as recorded in the Old Testament, is but an important part of the wider study of Oriental history. Events regarded formerly as mere incidents in the life of the Israelites are now seen to be but portions of "greater and more widely extended popular movements, the result of a vast heaving of the nations," extending from the banks of the Tigris to the lowlands of Egypt. The Hebrew record has vindicated its position and the Bible again assumes its place in the ancient literature of the world, and still ranks as the very best of the "sacred books of the East."

The spirit of skepticism has not spared the traditions of the Old Testament, but sought to relegate them to the land of myth and fable; but as the Babylonian legends were written in a language allied to the Hebrew tongue, the test became not one of merely mythological similarities but extended into the closest philological comparison. The date of the committal to writing of the Hebrew traditions is not known, but the tablets found at Tel-el Hesi, or Lachish, show that writing was common before the days of Moses. It is universally admitted that Hebrew or biblical names have a meaning, and it is supposed that the ideogram of *Erech*, or *Ur. Ki.*, "the city of the land," or *Unuk*, is a corruption of Enoch.

"The creation tablets" are also shown to contain the same record that is given in the first chapter of Genesis. They may be arranged in the same order, tablet I. representing the first day, tablets II., III. and IV. work of the second and third days, the creation of light, the separation of heaven and earth, the banishment of the dragon Chaos to the depths of the under world.

Tablet V. corresponds to the fourth day, and records the ordering of the heavenly bodies. Tablet VII. records the creation of cattle and creeping things and probably of man. The story of creation in the tablets corresponds with the myths and traditions of all the Eastern nations, and has relation to the following: (1) The stars; (2) the zodiac signs; (3) the four seasons; (4) the equinoxes and solstices; (5) the night; (6) the month; (7) the day and sun. The fifth tablet is the largest of the creation tablets, and is also the most important, like the first of the series that comes from the Royal Library of Assur Banipal, at Nineveh.

The following is the translation of thirteen out of twenty-two lines:

1. He made pleasant the positions of the great gods.
2. The constellations, he arranged them; the double stars he fixed.
3. He ordained the year; he appointed the zodiac signs over it.
4. The twelve months of constellations by threes he fixed.
5. From the day when the year commenced to its close.
6. He established the position of the crossing stars, and for the seasons their bounds.
7. Not to make fault or error of any kind.
8. The abode of Bael and Ea along with himself he fixed.
9. He opposed great gates on either side.
10. The bolts he made strong on the right hand and left.
11. In the mass he made an ascent (staircase).
12. The illuminator he caused to shine to rule the night.
13. He appointed him to establish the night until the coming forth of the day.

The important point is, Have we any trace of the Story of the Fall in the Babylonian inscription? and, if so, is it in any way associated with death? The first indication is afforded by the seal figured in Mr. George Smith's Chaldean Genesis (P. 88), in which a scene in many ways re-



sembling the Fall is represented. A man and woman are seated on either side of a tree, from whose branches hang rich bunches of fruit, and behind the woman a serpent is rearing up. The garden of the gods is represented upon several seals, notably one in The Hague museum and some in the Cesnola collection. In the mythological tablet, which is the third of the creation series, is described the various wicked acts of the serpent Tiamat:

The great gods, all of them determiners of fate,  
They entered, and, death-like, the gods are filled,  
In sin one with the other in compact joins.  
The command was established in the garden of the god.  
The asnan (fruit) they eat, they break in two  
Its stalk; they destroyed  
The sweet juice which injures the body.  
Great is their sin. Themselves they exalted  
To Merodach, their redeemer. He appointed their fate.

In all religions we meet with a hostile spirit serpent and dragon, the wicked principle which is the emblem of death and darkness. In mythology this wicked serpent is represented by the great dragon Tiamat, which for millions of years had coiled around the earth like a serpent around the egg, and is represented on the monuments as a serpent-limbed woman. The connection between the serpent and night, and consequently with the long first night which preceded the work of creation, or two great mystic serpents is mentioned in the inscriptions, the eternal enmity which had existed between darkness and light, the evening and the morning was to exist between the seed of the woman, Eve, and the serpent, but in the end the seed of the woman should triumph.

In the Babylonian mythology Merodach was the lord of light, the opponent of darkness, who became the good one as the serpent became the evil one. Three of the tablets of the creation series are devoted to the creation of light, the war in Heaven, the defeat and curse of the serpent, as well as traces of the legend of the Fall.

It is interesting to observe in the Babylonian legend the hostility is not only against the gods but also against certain divinely-made beings who lived in a garden. The direct association of the subtlety of the serpent and the practice of magic, is a comment on the passage in the Bible, "The serpent beguiled me." All of these thoughts we find embodied in the pictograph inscribed upon the seal, as described above.

*The History of China.* Being the Historical Chapter from the Middle Kingdom. By the late S. Wells Williams, LL. D., Professor of the Chinese Language and Literature in Yale College; With a Concluding Chapter Narrating Recent Events, by Frederick Wells Williams. Charles Scribner's Sons: New York, 1897.

The history of China begins with the story of creation. Pwanku chiseled out the world with a mallet and chisel, and made openings through which may be seen the sun, moon and stars. He grew in stature six feet every day, and continued his work for 18,000 years. When he died his head became mountains, his breath wind and clouds, his voice thunder, his limbs were changed into the four poles, his veins into rivers, his sinews into the undulations of the earth's surface, his flesh into fields, his skin and hair into herbs and trees, his teeth, bones and marrow into metals, rocks and precious stones, his beard into stars, his dropping sweat into rain, and, lastly the insects which stuck to his body were transformed into people. He was succeeded by three rulers called the celestial, terrestrial and human sovereigns, the impersonators of human powers, whose influence has run through Chinese philosophy, religion and politics.

The Chinese conception is that the world is a plain surface, square and large, bounded on the four sides by the four seas.

Their mythologic history ends with the appearance of Fuh-hi, whose

accession is placed at B. C. 4852. Fuh-hi and his seven successors are said to have reigned 747 years, or 93 years each. The Chinese annalists fill up the reigns of these chiefs with inventions and improvements.

A tremendous deluge occurred during the reign of Tao, B. C. 2293, or nearly synchronous with the deluge of Xisuthrus, the record of which is in the Shu King. Another one of the alleged records of this is the inscription on the rocks of Kaulaushan, on the peaks of Mount Hang. The characters in which this tablet is written are of an ancient tad-pole form. The Shang dynasty began B. C. 1776. The chronicles which are gathered in the "Bamboo Books." The Chan dynasty began B. C. 1122, and continued until B. C. 249. The only known relic of these dynasties is ten stone drums, discovered about 600 A. D. They are stone pillars measuring 18 to 35 inches high and 28 inches across, and covered with inscriptions. The Chinese wall was built in the reign of Hwang-ti, who is called the Napoleon of China.

This monarch endeavored to destroy all the records written anterior to his reign, but they were not all lost, for writing was common and the "Bamboo tablets" were numerous. During the reign of Ming-ti, A. D. 65, a deputation was sent to India to obtain the sacred books and authorized teachers of Buddhism, which the emperor intended to publicly introduce into China. This faith had already widely spread among his subjects, but henceforth it became the popular belief of the Chinese, and extended eastward into Japan. This monarch and his successor, Chang-ti, penetrated with their armies as far westward as the Caspian sea, dividing and overcoming the various tribes on the confines of the desert and at the foot of the Tien Shan, and extending the limits of the monarchy in that direction farther than they are at present. The Chinese sway was maintained with varied success until toward the third century, and seems to have had a mollifying effect upon the nomads of those regions.

In these distant expeditions the Chinese heard of the Romans, of whom their authors speak in the highest terms.

The Un dynasty began in 1260 A. D. A grand canal was lengthened and a gateway in the great wall was made, upon the arch of which was a Buddhist charm in six different kinds of characters, Mongolian, Chinese, Magyar, Thibetan, etc. Marco Polo visited China about this time (1365 A. D.), which was the earliest period in which modern Europe became acquainted with the ancient kingdom, though it is supposed that Parthian merchants had carried on direct trade between Rome and China at an early date.

\* This trade enabled the Nestorian missionaries to penetrate into the remote regions. The indirect commerce between China and the Greek Empire continued until the rise of the Moslem power. Buddhist pilgrims between China and India visited the central and western parts of Asia. The Arabs extended their voyages to various ports in China, and furnished the first authentic accounts of the Chinese from western writers. Medieval travelers made pilgrimages to Delhi and met with Chinese envoys. The journal of Friar Odoric, who landed at Canton after a long trip from Bagdad, by way of Sumatra, contains much of interest in connection with China of the middle ages. The first person who conducted a vessel to China under the European flag was a Portuguese, who sailed to China in 1516 A. D.

The Dutch commerce commenced in 1622. The Russians sent agents in 1667, and compelled the Chinese to treat them as equals. Peter the Great in 1692 sent an envoy to Peking, and the Empress Katharine another in 1727.

The first English vessel was sent to China in 1635, but the Portuguese prevented them from getting a footing. Such is a brief resume of the history of China, from the earliest dates down to modern times, as it is given in this valuable book.

Our readers will find the work very comprehensive and instructive, and perhaps the best that has been written on the subject.





MOUNTAINS OF SIERRA BLANCA,  
*Scenery of the Denver & Rio Grande R. R.*

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TOTEMS INSCRIBED UPON PAPUAN SKULLS

INTRODUCTION BY MR. G. A. DORSEY.

While considerable numbers of crania from New Guinea have been described, and while the type of the Papuan is fairly well determined, it has seemed that the collection which furnishes the basis of this essay combines a sufficient number of characters to make its description of interest and importance. In the first place the skulls come from a single locality, having been received from a native chief who used them for the adornment of his house and prized them, it is said, as trophies of war. In the second place each skull has been decorated in the frontal region by designs in incised lines, and the jaws are bound to the skull by banages.

No attempt has been made to compare the results obtained in the present examination with those of previous investigators. This is to be regretted, but the available literature on the subject is not sufficient to make the undertaking at all satisfactory.\* This being the case only the facts which have been obtained by observation have been recorded. In the first part there is a somewhat detailed description of each skull, the collection being divided according to sex, then follows a summary in which the two sexes are contrasted and averages for the entire series given, together with a table of measurements and plates. There is finally, in the second part, a description of the frontal carvings and the bandages by Prof. W. H. Holmes, to whom I am much indebted for consenting to undertake this work.

As may be seen, the collection comprises sixteen skulls, distributed as follows: Males, eight; females, seven; child, one. Apart from the child's skull there is very little discrepancy in the age of the crania. The average may be put at about thirty-five to forty years, but one skull having the basilar synchondrosis open, and none of them showing any signs of considerable age.



The skulls are, as a rule, long and narrow, with compressed frontal region, fairly well developed parietal eminences which are usually situated pretty well back. There is a marked difference between the two sexes in the dimensions. Thus, the average maximum length in the male is 182 mm., in the female the average is 171 mm. The longest cranium measured is 191 mm., that of a male; the shortest is 164 mm., belonging to a female. The average maximum width of the male crania is 131 mm., of the female 127 mm. The range of variation for the entire series is from 118 mm. to 140 mm. Adopting the classification of Prof. Flower for the cephalic index, it appears that the male crania are without a single exception, dolichocephalic, having a mean index of 71, with a maximum of 74 and a minimum index of 65, the series as a whole being remarkably uniform. There is even more uniformity in the indices of the seven females, with the exception of one skull which has the low index of 65. The other six range from 72 to 77, and average 75, and with the addition of the index of 65 the mean total average for the female index is 73. As the glabella contributes not a little to lower the index in the male cranium, the difference between the two sexes is no more than we should expect to find. The decided dolichocephalism of the entire series is extremely interesting in view of the probability, as shown by Turner, of the existence of a brachycephalic as well as a dolichocephalic type on the island of New Guinea, and I more than ever regret that the exact locality from which the collection under consideration comes is not known. It may be noted here, however, that the uniformity which generally prevails in the cephalic index, as well as in the other important indices of the cranium, render it extremely likely that the crania are from a single locality. How much light can be thrown on the location of this region by the carvings on the frontal bones remains yet to be seen.

REMARKS ON DECORATIVE FEATURES BY WM. H. HOLMES.

Our information in regard to the crania described by Dr. Dorsey in the preceding pages merely enables us to locate them in a general way in the island of New Guinea. The sea captain who brought them to this country affirmed, so it is stated, that they were obtained from a native chief, and it is probable that they came from the vicinity of some of the ports of the island. That they came from this island is confirmed by the craniological characters of the specimens, and more especially by their unique embellishments, the latter differing from those of Borneo and other islands from which examples have been secured.

As a matter of course in an island of the great size of New Guinea, there are numerous more or less distinct groups of people, and corresponding groups of art phenomena, and when these become better known there will probably be little difficulty in relegating these skulls to their proper people and province.



Fig. 1

Two Views of Male Skull

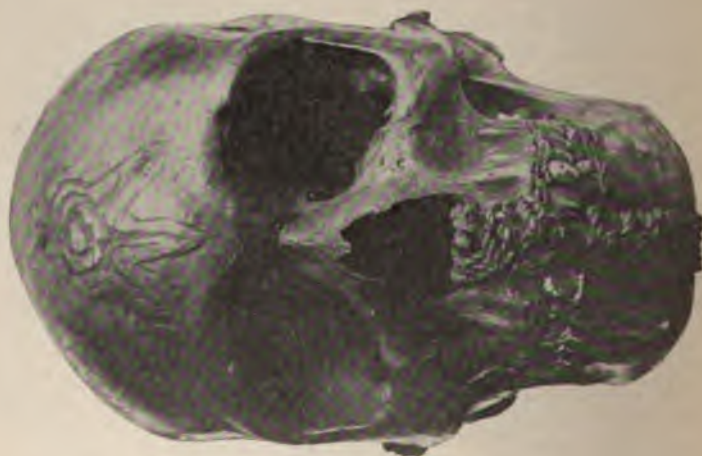


Fig. 3.  
Female Skull.



Fig. 4.  
Female Skull



It seems not unlikely that they are from the northern shores of the Papuan Gulf, in the British protectorate, since the decorative designs seem to affiliate pretty closely with those of this district, as illustrated by Haddon;\* and Chalmers describes engraved skulls as commonly preserved in the temples of that locality.

It seems pretty well established that skulls of friends as well as of foes were preserved and prized by these peoples, and I get the impression from the care taken of the specimens under consideration, and the tasteful elaboration of the decorative features, that they were the skulls of members of the tribes or families owning them, rather than of enemies. Chalmers is quoted by Haddon as saying that he saw in the temples of the village of Maina "numerous skulls of men, women and children, crocodiles and wild boars, also many breasts of the cassowary. All are carved and many painted. The human skulls are of those who have been killed and eaten. \* \* \* I fancy each man who has killed or helped to kill a foe has his own peculiar painting and carving on the skull."\* This author suggests that the skulls may have been used as offerings to the wicker images seen in the temples. It is possible that Chalmers' idea that the skulls seen were the skulls of enemies taken in battle was only a guess. I do not have sufficient of the literature of the subject at hand to enter into a discussion of this point, but believe it to be a fact sufficiently well established that among many of the insular peoples skulls of friends and relatives were preserved and revered as sacred relics, and even in cases became the subject of superstitious veneration or worship; and this is certainly much more reasonable than to suppose that any such feelings should extend to the skulls of strangers and enemies. It is undoubtedly true, however, that the skulls of enemies were and still are taken and preserved by these and many other peoples; the reason most commonly given being the belief that they imparted to the possessor some of the enviable qualities of the person represented, beside no end of magic influence. These skulls were used as drinking cups and may have been thought to impart extraordinary properties to the liquor used. Employed thus and for ceremonial purposes they were probably painted, engraved or otherwise ornamented, but I have difficulty in believing they would be carefully kept intact, preserved with great care and elaborately ornamented as are the skulls here considered.

The preservation of these skulls was evidently a matter of much concern to the owners. It was essential that they should be perfect in every detail. Especial care was taken that no part should be lost. The jaws were secured by fastenings at the right and left and in front. The teeth were carefully tied in and when lost were replaced by artificial teeth made of wood or other material shaped in imitation of the original teeth.



Fig. 5. Female Skull.



Fig. 6. Child's Skull. \*



It is apparent that not only were the crania of this collection cared for in the most scrupulous manner, but that æsthetic considerations were of importance. All the seventeen skulls are decorated with designs engraved on the frontal bone, and in two cases (40,613 and 40,618) the figures extend back over the coronal suture to the parietal bones. Viewed from the front all are centrally placed, as seen in the plates. In execution the work is not of a high order; the scratchy lines, evidently engraved in the main with a sharp point, straggle about in a haphazard way. My illustrations, figures 7 to 13, engraved one-half actual size, were secured by working over carefully made rubbings with a fine pen point, thus preserving, as far as possible, the scratched



Fig. 7. Engraved Design From Skull.

effects. Some of them are quite deep, but none are regular or even, while the broader areas are, in many cases, worked down slightly all over by scratchinfi and scrapiug. All the designs are comparatively simple, not embodying more than two or three elements in any case. It is my impression that all are significant, being totems or having their origin in the crude mythologic conceptions of the people. Nearly all embody easily distiuguished animal forms. The more formal examples, approaching the purely geometric, are also doubtless animal derivatives or representations of land, water or other natural phenomena.

## REMARKS BY THE EDITOR ON THE INSCRIBED FIGURES

The above extracts are from publication 21, Anthropological series, Vol. 11, No. 1, Field Columbian Museum. The cuts used are those which appeared in the publication and which have been kindly loaned. The designs of making the extracts is not so much to describe the anatomical characteristics of the skulls, nor even to show the characteristic ornamentation, but to exhibit the totemistic figures as to draw attention to the striking resemblance between them and the figures which are very common among the tribes of North America. The most striking analogies are contained in the emblematic mounds of the state of Wisconsin. The very conventional shapes which are found upon the skulls are also very common in these earthworks or gigantic bas-reliefs. It is not claimed that there is any connection between these widely separated peoples, but the analogies are all the more surprising on this account. The Papuans and the Maoris and the Australians constitute three divisions; of these the Australians form the first division, the Figures-the people of the second division, while the Samoans, Tongas, the inhabitants of the Caroline Islands, Marquesas and the Sandwich



Fig. 8. Engraved Design from Skull



Fig. 9. Engraved Design From Skull.

Islands belong to the third or eastern division. The native religions of these widely separated people was quite similar. It consisted in the worship of elementary spirits and deified ancestors, evil demons; also the practice of divination, the taboo or practice of rendering certain persons and things sacred, and a great veneration for the dead. Tattooing was very common among them and especially among the Maoris. Tattoo marks were considered by the Maoris not only a sign of dignity but as adding to their fierce appearance when in battle. (See Journal of Anthropological Institute, April, 1885. Article by J. H. Carey Nicholls, F. R. G. S.) The deified ancestors of the race were held in high estimation and were represented in the council houses in the form of wooden idols of life size, elaborately carved

with flaunting eyes, protruding tongues, defiant mien, and painted with red and white pigments, calculated to inspire the Maoris with a feeling of superstitious veneration. These were regarded as the progenitors of the principal tribes. The idols remind us of the carved figures that were common among the Cherokees and Choctaws of the Gulf States. The custom of burying with the Chief or warrior his weapons and accoutrements also reminds us of the American custom.

The principal weapon of war was a spear-like instrument, beautifully carved to represent a grotesque human head, from which the tongue protruded. In the New Hebrides it was the custom to represent the Chief who had gone to the Shades by carved wooden images called "mummies." Some of these have red skulls, covered with sun-baked clay to make them look like faces and all real objects of worship.

They have also in this island representations of the sun and moon carved upon grave stones; as well as carved faces showing that there was a worship of the heavenly bodies as well as ancestors. The official hieroglyphic for the soul of the dead is a conventional face, the superstition being that the dead ordered the affairs of the earth. Wooden "demits" are placed within a house which is in the middle of a semi-circle on the top of which is a face of hideous and ferocious aspect. Stone "demits" also have crescent moons and rainbows painted on them. The tattooing and head-baking are the most remarkable customs among these



Fig. 10. Bird Totem From Skull.



Fig. 11. Engraved Design from Skull.

tribes. See B. T. Somerville's notes on the Island of the New Hebrides, *Journal of Anthropological Institute*. August, '93.) The custom was to tattoo the face during life with various figures; after death to cut the figures deeply with dyed chisels made of bone, thus making deep furrows in the skin, perpetuating the patterns and accentuating them by a postmortem process; this will perhaps account for the figures which were inscribed upon the Papuan skulls, though the tattooing was generally on the face instead of on the top of the head. It was the custom, however, among the North American tribes to scarify the head, leaving the hair to represent the totems. The skulls



which were discovered by Mr. Cushing in the Florida Keyes still contained the totems which had been marked in this way. The reverse of this may have been common among the Papuans, scarifying the head with the totems. It was no uncommon thing for the head of a beloved relative to be embalmed. It was a superstition that departed chiefs and prominent ancestors, in some mysterious way, were continually present among the people. A very striking analogy is found in the custom of exposing the skulls of the heads of enemies on posts as trophies of value, while those of the friends were sacredly guarded; these were exposed near the village so that their prowess might be seen, exactly as the North American Indians were accustomed to fasten the scalps of their enemies to posts near their villages. The baked heads of the Maoris were preserved, all bearing marks of the tattooing. The process of embalming consisted in the removal of the interior and baking. Head-hunting was more in the nature of the war-like practice of scalping. The honor of the warrior consisted in the number of skulls or heads he could gather as the number of scalps did among Indian warriors. Among the Southern tribes heads seem to have been gathered, for the excavations of the mounds have in a few cases revealed heads that were separate from the bodies. The writer has found among the Emblematic mounds bodies which had



Fig. 12. Serpent Mouth from Skull.

been "bundled" and placed in rows with a head on top of each bundle or flat heap of bones, the totem symbol of the clan being found in the shape of the bas-relief in earth, the effigy of a turtle or frog or pigeon or a swallow being very common.

As to the animal figures on the skulls and their resemblance to the animal figures, or totems, it is difficult to account for them. The sun symbols in the shape of dotted circles is world wide. It may have been transmitted from continent to island and from island to distant continent. The same symbol is found in Central America covering the robes of the priests, as

well as in Babylonia and Chaldea, and the same kind of peaked cap is seen on the head of the priests. But when we come to the bird figures, the frogs, duck and the serpent mouth, and find that they have the same conventional shape in Wisconsin and Tennessee that they have among the Papuans of New Guinea we are non-plussed. The sun symbol is not often found in so close connection with the animal effigies but it is often seen in connection with the serpent figures, and what is more the inscribed



Fig. 13. Serpent Symbol from the Mounds.\*

\*This cul is given to show the resemblance between the totems on the skulls and those among the mounds, as the mouth and the concentrate circles are very similar in both cases.

shells which contain the serpent symbol and the sun symbol combined are generally found on the bodies of the buried dead, showing the same superstition about the connection of the soul with the totem of the clan or individual prevailed among the uncivilized tribes throughout the world. May it not be that the custom of inscribing these animal figures on the skulls is a survival of the Zoolatry which prevailed, and a proof of the wide distribution of the totem system.

## THE BONE AGE IN EUROPE AND AMERICA.

BY STEPHEN D. PEET.

The description given by Mr. G. E. Laidlow of the bone relics in Canada introduces the question whether there was not a bone age in Europe and in America. The division of the prehistoric period into the three ages is based upon the preponderance of rude stone, polished stone and bronze relics, though no one claims that there was any hard and fast lines between them or even that any one age was entirely free from the relics which preponderated in the other. This is certainly true of the more advanced ages for the Neolithic age presents so many rude stone relics that it is at times difficult to distinguish it from the Paleolithic; and the Bronze age presents so many stone and copper relics that it is difficult to draw the line between the two. Now it is even claimed by some that there was a copper age between the Neolithic and the Bronze, and that copper was a matter of commerce between the people on the Mediterranean and those to the Northward. The Bronze was introduced into Europe after the discovery of the mines, and when tin was sufficiently abundant to be amalgamated with copper and make a new metal. This would bring the Bronze age to a comparatively late period, and would place the Copper age in the same relative age in Europe that it is in America. The Bone age of course would be much earlier than copper and would naturally come between the Paleolithic and the Neolithic and might well be established as indicating an intermediate stage of progress and a specific condition of society.

There are many bone relics on the islands off the Coast of California. The consignments sent to the museums are replete with shells and bones, some of weather worn and water worn, indicating a very considerable age, though no such age as the Paleolithic relics exhibit. These shell relics are generally wrought into artistic shapes, probably used as ornaments of the person as the colors are bright and beautiful, the abalone shells being very abundant. The bone implements are rude but were evidently very useful in the industrial arts. We may say that the letteral on seashore tribes of California were in the Bone age, though they had a few pecked stone relics and some pottery. The hunter tribes of upper Canada were also in the Bone age. Those on the borders of the Great Lakes, in New York State and in New England were in the Neolithic age, as polished stone relics were very abundant among them.

A comparison between the relics of the ash-beds of Canada and those of the caves of Europe will be appropriate in view of this possible submission. It may be necessary to make the distinction between the cave contents much closer and recognize the



Horizons in them very carefully before we are prepared to draw this comparison, but this is a work which should be done whether there was any Bone age or not.

The discovery of bone relics among the ash beds of Canada reminds us of the discoveries of relics in the bone-caves of Cracow in Poland by Prof. F. Romer. In these caves there were many bone relics, but they are associated with the remains of extinct animals and evidently belonged to the Paleolithic age. There were different caves, some of which contained relics belonging to the Neolithic age, but others contained relics which must be ascribed to the earliest epoch of the Paleolithic age. The following description of them is taken from the monograph prepared by Prof. Romer: "The cave of JARZMANOWICE is the oldest of the caves thus far explored; at least it contained the largest number of the bone relics of extinct animals and relics which are associated with them. From this cave came a knife made of the tusk of the wild boar, ground down, so that the enamel constituted the edge; barbed arrow head made of bone; also bone beads, boring instruments, several awls, a bone needle with an eye, an implement in the "shape of a shovel," a stone hammer or "crusher made of diorite, and a small amount of rude pottery, no celts and scarcely any stone relics. The remains discovered were as follows: A jaw of the cave bear, bones of the cave hyenas of the *Bos Priscus*, of the lynx, of the horse, of the *Elephas Primogenitus* of the rhinoceros, of the cave lion.' The stone relics were of the Palæolithic type. Some of them seem to have been made by flakes which were struck off from a large mass of flint, or "core" and afterward worked into a regular lancet shaped knife; one of them was notched so as to make a saw. There was also a flat piece of bone, the use of which is unknown. The stone implement was called a "corn crusher," but this would imply agricultural pursuits which would be inconsistent with an age when the extinct animals were present. It is more likely that it was a "hammer" used in crushing the bones of animals in order to extract the marrow.

The cave of WIERSCHOW called the "Mammoth cave," contained many relics which evidently belonged to the Neolithic age. Prof. Romer saw excavated from this cave a fire-bed with charcoal in it, and in the bed several "thin rods pressed together at the sides, sharpened at the end, lancet shaped, fish like in form; the largest of which was one foot long and  $\frac{1}{8}$  of an inch wide and made of ivory." In the same cave were the bones of the Polar fox, the reindeer and the Mammoth. The presence of the reindeer would imply a colder climate, and the whole contents of the cave, when compared with those at Jerzmanowice show that great changes had occurred before this cave was occupied.

Another cave at KAZARIA contained amber beads, also glass beads of "foreign origin," spindle whorls, polishers, all

of which would show that this cave was occupied up to historic times. The opinion is expressed that the caves of Poland were inhabited by man through a long series of years, and that a complete record of the prehistoric age with its different epochs, its different stages of civilization was contained in them. Many of the animals which were present at the earliest epoch became extinct, but man and the cave bear continued through the different periods. There is one discovered relic, which has excited considerable attention. It is an ivory rod, which is "perfectly round," but tapering to a point at the ends with a groove in the middle with rings and other ornaments inscribed upon its surface. The use of it is unknown. It was found in the cave at Jarzmanowice. The opinion is expressed by Prof. Romer that the bow and arrow was used by the people of the earliest period, but this is a question which will require further research to decide. There were a very few stone axes discovered and these in the cave at Kazarmah. These were serpentine, perforated in the center with a circular hole, to receive a handle. They were evidently Neolithic. The comparison of the relics found in the ash-beds of Canada with those in the caves of Poland is very instructive. It shows that there was a very rude stage of society among the hunter tribes of America, and if we grant the use of the bow and arrow to the troglodytes, we must conclude that there was not very much difference between them. The savage hunters of Canada to be sure belonged to the Neolithic age, no other age having existed on the continent, but they bear the same relation to the other prehistoric races of America that the "troglodytes" did to these of Europe.

The evidence is furnished by the remains of extinct animals found in the caves of Europe that the stage of savagery which is represented by the bone relics found in the ash-beds of Canada existed in Europe many years ago; possibly as long ago as preglacial times; or to be more definite, we might say the village people who left the ash-beds represent the upper status of savagery while the troglodytes about whom we have been speaking, represent the lowest stage. In case we apply the distinctions which Mr. Morgan, the American ethnologist, has drawn to the cave-dwellers of Europe on one side, and to the hunter tribes of Canada upon the other, we shall find that the caves with the bones of such extinct animals as the rhinoceros, cave bear, cave lion, represent the lowest status, and the caves with the reindeer remains, the middle status, and those containing pottery and the bones of later animals the upper status, and so the parallel would be between the ash-beds and the later cave period.

The opinion, however, has been expressed that some of the so-called extinct animals, especially the mammoth, survived both in Europe and in this continent to a much later date than is usually assigned to it. Mr. James Geikie has

suggested the possibility of its having migrated with the reindeer to the north and afterward appeared in Great Britain. It certainly existed to a late date in Siberia, where complete carcasses of it have been found in frozen ground, and the same kind of hairy animals seem to have been familiar to the cave-dwellers of the latest epoch, a great change in its appearance having taken place between the earliest and latest cave period. This great Pachyderm seems to have migrated to the new world during the period of cave dwellers in Europe, but survived down to the period of the formation of the peat-beds and the later alterations of the Coast-line. There is in this a strong hint as to the date at which the savage hunters first arrived in this region of America north of the Great Lakes. The Mastodon which was known to the troglodytes of Europe had both appeared and disappeared on this continent. The arrival of the hunters, being later than its disappearance, there are no signs whatever that the hunters of Canada were at all acquainted with the animal or had any tradition that it was ever present in America. The impression gained by Mr. Laidlow in his explorations of the ash-beds was that the latest villages dated but a short time before the discovery, were probably occupied by the Hurons; or as Sir. William Dawson would say, the Hochelagans, but the earliest villages by a tribe now located in Labrador, with a slight sprinkling of the Eskimos. Another conclusion is forced upon us by Mr. Laidlow's exploration. The fauna which accompanied the hunter tribes in America was just that which existed at the time of the discovery and no great change appeared in it until after that date. If there was any change in the fauna of America during the time that man existed on the continent, it must have occurred farther south than the Great Lakes, for it is in the region between the Great Lakes and the Ohio River that the only traces of the association of man and the mastodon have been found and they are so few that we must conclude that animal was rapidly disappearing. The Mound-builders may have existed on the continent early enough to be familiar with the Mastodon but the hunter tribes of Canada did not. If we take the history of the ice sheet which covered the region north of the Great Lakes and date the appearance of the hunter tribes after its disappearance, we shall find that these tribes were comparatively modern, and that a long interval of time must have existed between the troglodytes of Europe and the hunter tribes of Canada. The changes which occurred in the social status are manifest for they are shown by the relics, inasmuch as two grades of progress intervened. Modifications, extinctions and migrations have occurred in the fauna. The one great age of man, namely the Paleolithic age, has passed away; the close of geological time has occurred, the Neolithic industry has been introduced, the latest episode of the Quaternary period has

taken place, the Champlain epoch has been finished, the occupation of the terraces by the Littoral or Seashore tribes may have occurred, but the advent of the hunter tribes who left the ash-beds and introduced the Neolithic age must have been late in history. At least, four thousand years must have elapsed in Eastern Asia and perhaps two thousand years in Southern Europe before these bone relics were deposited. This may seem conjectural, yet we may safely conclude that the so called "bone" age or in other words the age in which bone-relics were the most numerous, survived several thousand years after it had disappeared from the Eastern continent, the event of the discovery being the date at which it began to disappear from the Canadian villages.

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#### TABLE MANNERS OF ANCIENT PEOPLE.

In reading the work on the Mycenæan Age, by Tsountas one is surprised at the descriptions of the table manners of ancient people. They occupied the second story of the habitants; the lower story had no floors except the earth.

In cleaning out these lower stories the bones of animals were frequently found, some of them wild, others domestic, the pig being the most numerous. This indicated that the upper story people flung the leavings from their tables down stairs or through the chinks in the floor. The author cites the testimony of Homer to prove that such was the custom in his time. The noble wooers of Penelope were accustomed to fling the bare bones on the floors, where were also the hoofs of the beeves, at hand to be used as missills, and the bloody hides for the non-combattants to shield themselves with when any misunderstanding might arise at the Royal banquets. We are thus reminded of the habits of the Lake-dwellers of Europe and the sea villagers of Borneo, who were also in the habit of throwing the refuse of their feasts through the chinks in the floor into the water below.

## THE RELIGION OF CHINA AND MEXICO COMPARED

BY JAMES WICKERSHAM.

Both the numerical philosophy and the religion of the Mongolian people seem to proceed through evolution from one to many. While their philosophy grew to embrace a wide range of members, and their religion a multitude of duties, yet each was, in a sense, an inverted pyramid, resting upon a single capstone. With them the life history of the universe began in Chaos, when only a single force or germ of life, unvitalized and unorganized the *tae-kieh* was existent. Out of this unorganized life force was evolved the dual powers, the male and female principles, the *yang* and *yin*. By the action of these principles one upon the other, organization was commenced, the heavens, earth and men were formed, and from the continued and multiplying forces, powers and functions produced by these primordial principles there resulted that systematic and orderly arrangement in Nature which now so delights the thoughtful student. To them the sun is the great *yang*, the moon the great *yin*; the south, sunlight, heat, force, growth, masculinity, and Heaven represent the *yang* principle; the *yin* is recognized in the north, shadow, cold, inertness, darkness, femininity and earth. <sup>1</sup> Life comes from the south and the *yang*, passes across the stage and disappears at the north, the abode of the dead, in the *yin*.



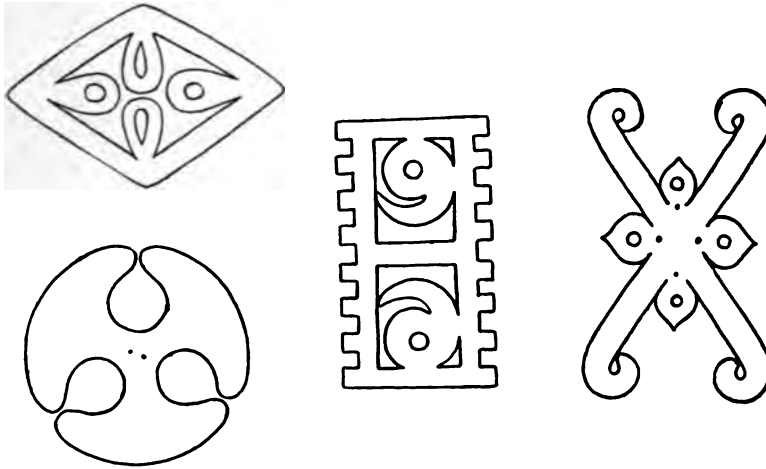
SWASTIKA.

This masculo-feminine theory of the organization of the universe is distinctly recognized as the basis of Mexican and Mayan philosophy. The Zunians assert that, "Before the beginning of the new-making, *Awonawilona* (the Maker and Container of All, the All father Father) solely had being. There was nothing else whatever throughout the great space of the ages save everywhere black darkness in it, and everywhere void desolation the Sun-father father formed the seed-stuff of twain worlds, impregnating therewith the great waters, and lo! in the heat of his light these waters of the sea grew green and scums rose upon them, waving wide and mighty until, behold! they became *Awitclin Tsita*, the "Four-fold containing Mother-earth," and *Apoyau Ta-chu*, the "All-covering Father-sky." From the lying together of these twain upon the great world waters, so vitalizing, terrestrial life was conceived; whence began all things of earth, men and the creatures, in the four-fold womb of the world." <sup>2</sup> From the union of the Father-sky and Mother-earth the *yang* and the *yin*, sprang the organization of the universe and all laws and life therein.

1. The Middle Kingdom, vol 2, p 138 Williams. Japan as it was and is, p 62, Hildreth.

2. 13th Ann Rep. Bu. of Eth, p 379, Cushing.

The Chinese believe that at creation "the pure khi ascending formed the heavens; the impure khi descending formed the earth." <sup>3</sup> The Zunis assert that, "Thereupon the Earth-mother repulsed the Sky-father, growing big and sinking deep into the embrace of the waters below, thus separating from the Sky-father in the embrace of the waters above;" in this paraphrase we see the pure ascending, the impure descending and the formation of heaven and earth as in the Chinese theory; the Chinese speak of the sky as father, and the earth as mother, as do the Zunians. <sup>4</sup> Dr. Brinton tells us that in the Mayan philosophy "Gukumatz is positively said to be the bisexual principle of life represented by the male Xpiyacu and the female Xmucane, ancestor and ancestress of al that is," <sup>5</sup> while Bancroft asserts, "That the worship of the reciprocal principles of nature was recognized and practiced in America, there is in my mind no doubt." <sup>6</sup> The Mayan male and female



SYMBOL FROM HOPEWELL MOUNDS.

principles exactly agree with the yang and yin of Chinese philosophy.

The yang and yin (male and female) principles are represented in Chinese hieroglyphics by a circular ideogram, in the semi-diameter of the circle they describe a semi-circle, and another on the lower side of the opposite semi-diameter. The symbol then represents the yang and yin; the eyes in each are said by some to refer to the egg. An additional line forming three equal sub-divisions of the circle gives the symbol of *tai-chieh*; this denotes that the male and female princi-

3. *Social Life of the Chinese*, vol 2, p 396, Doolittle.

4. *China and the Chinese*, vol 2, p 70, Davis.

5. *A Primer of Mayan Hieroglyphics*, p 61, Brinton.

6. *Native Races*, vol 3, p 503, Bancroft.



ples have been brought into rectifying union. In their appling of colors to this philosophy the Chinese paint the yae red, representing the sun and heat; the yin is yellow to represent the earth; while the third subdivision of the circle was green to represent offspring or new growth—the beginning of life.

The yang and yin symbol is found in America; upon the carved monuments 7 Copan and now recently in sheet copper in the Hopewell mound in Ohio. The latter is cut from a copper plate; the yang and yin symbols are separately enclosed in a square, while along the edge of the plate, on each side are found eight projections, which, on this Buddhist relic suggest the eight lines of Fuh Hi, often found with the yang and yin symbols. The symbol of the tae-kieh is found engraved upon the shell disks of Tennessee, 8 as well as in the hieroglyphics of Mexico. The drawing of the symbol on the Tennessee shells also shows a decided connection with the Aztec calendar; the thirteen bosses on the outer edge equal the thirteen days of the Aztec ceremonial week; the seven inner circles equal the work of seven days, or they may refer to the "seven caves," while the symbol of the tae-kieh in the center is said by Brinton and Valentini to refer to culminating days. 9 In the Aztec hieroglyphics drawn by Valentini from Humboldt's Ms, each recurring seventh day is marked with the tae-kieh, and signifies these as it does in Chinese that a new period has begun—it signifies the beginning, not the ending, and probably refers to the beginning of some time period in the Tennessee shell ideogram.

The Swastika of India, the Chinese Wan, is an ancient Buddhistic emblem. It is drawn on the breast of Buddhistic idols, and is a special mark of the deities worshipped by the Lotus school; it is the symbol of Buddha's heart, and also stands for the number 10,000 in numeration. Swastika's cut from sheet copper was also found in the Hopewell mound along with the other Buddhistic symbol, the yang and yin; 10 calendar wheels of Mexico and Central America embody the form, and it is found on the carved shell of Tennessee. Thomas Wilson, curator of the department of pre-historic anthropology in the United States National Museum, in a special monograph on the Swastika, shows how widespread its use was in America: it was found in the Mississippi mounds, the Pueblos, Mexico and Central America. From the Toco mound in Tennessee was exhumed what he classes as "a statue of Buddha." Comparing this statue and the swastika he concludes: "It is not claimed that this shell proves the migration of Buddhism from Asia, nor its presence among North American Indians. "One swallow does not make a summer."

7. Essays of an Americanist, p 155, Brinton.

8. 2nd Ann. Rep. Bureau of Eth., p 278 Holmes.

9. Rep. National Museum; Smith, Rep. 1894, p 909, Wilson.

10. Cosmopolitan, Tau, 1895, p 335, Valentini.

10. The American Antiquarian, Sep., 1897, Moorehead.

But this figure taken in connection with the swastika presents a set of circumstances corresponding with that possibility which goes a long distance in forming circumstantial evidence in its favor." 11

The unorganized principles of life then, existing in Chaos, was the One Supreme Element in the philosophy of the Chinese and the civilized tribes of Mexico and Central America. 12 From this was evolved the male and female principles, the Chinese yang and yin, the Zunian Father-sky and Mother-earth, the Mayan Xpiyeoc and Xumcane ancestor and ancestress of all that is."

Continuing onward in this numerical philosophy, we likewise find the number three to be sacred. Heaven, earth and



man constitute the Chinese tau tsai, or three powers, 13 and are represented among these symbols by a circle divided into three parts, the upper representing Heaven, the center man, and the lower the earth. Identically the same idea and symbol are found in Mexico. Brinton says: "The triplicate constitution of things is a prominent feature of the ancient Mexican philosophy, especially that of Texcoco. The visible world was divided into three parts, the earth below, the heavens above, and man abode between them. The whole was represented by a circle divided into three parts, the upper part painted blue, the lower brown, the center white." 14

The number nine was likewise sacred. Brinton further says of the circle representing the three powers, heaven, earth and man, "Each of these three parts was subdivided into two parts, so that when the Texcucan King built a tower as a symbol of the universe he called it 'The Tower of Nine Stories.' The Chinese Buddhist pagodas have nine stories; 'the nine-storied pagodas of China are connected with the religion and worship of Fo; 15 nine is the perfect number of the

11. Rep of National Museum; Smith Sons and Rep., 1894, p 332, Wilson.

12. Native Races, vol 3, p 45, Bancroft.

13. China and the Chinese, vol 2, p 71, Davis.

14. Essay of an Americanist, p 154, Brinton.

15. China and the Chinese, vol 2, p 85, Davis.



Chinese, so it was with the Mayas. This common philosophy gave special prominence to the number four; the square form of their earth gave four seas, four quarters, four mountains, four gods, four elements and four colors; they divided the year into four seasons fixed by the solstices and equinoxes; the four quarters of the year were each assigned a god, a color and an element; each month was divided into four quarters and each of these assigned to a cardinal point and a god; in many ways common to both China, Japan and Mexico, Yucatan, they gave special sacredness to the number four; likewise to five; to the four cardinal points they added the center, making five; The city of Loh was the center or navel of China; Zuni was the navel of Zuniland and of the ancient Aztec empires: to each of these five points they gave a color, an element and a god; the five planets were each assigned to one of these points; and each region had a week of five days. Seven, eight, nine and thirteen were likewise sacred numbers in both lands; both the Mayas and Buddhists have thirteen heavens.

In each land this "sexual system of creation" began with Chaos, out of which sprang one source of life, from this was evolved the male and female principles in nature; then Heaven, Earth and Man; then the four elements, colors, directions, seas and quarters; then were formed combinations of five, and other numerical combinations, upon the same plan of development and represented by the same symbols. In each of these lands we find the same system of numerical philosophy interwoven into the very fabric of the government, philosophy and religion.

The emperor in Mongol land, in China, Japan, Mexico and Central America ruled by divine right; he was the "sun of Heaven." He combined in his divine office the centralized power of the religious orders; he was the supreme lord of the nation, its intercessor with the gods, its high priest, its Pontifex Maximus. In each nation, after the introduction of Buddhistic ideas, there was a recognized priesthood, interwoven into and forming the very basis of their civilization. Monasteries were filled with monks, and the nobler and learned and active subjects generally passed through the sacerdotal orders. The monasteries were the national schools; the monks were teachers, travelers, painters, printers, physicians and astronomers—the Literati. 16 "The priests of the Chinese state religion subordinate to the superior himself as Pontifex Maximus are the kings nobles, statesmen and the crowd of civil and military officers." 17 In Mexico, "it was the province of the priests to attend to all matters relating to religion and the instruction of the youth. Some took charge of the sacrifices, others were skilled in the art of divination; certain of them were entrusted with 18 the

16. China and the Chinese, vol 2, p 75, Davis.

17. The Middle Kingdom, vol 1, p 520, Williams

18. Native Races, vol 2, p 203, Bancroft.

arrangement of the festivals and the care of the temple and sacred vessels, others applied themselves to the composition of hymns and attended to the singing and music. The priests who were learned in science superintended the schools and colleges, made the calculations for the annual calendar and fixed the fast days; those who possessed literary talent compiled the historical works, and collected material for the libraries. To each temple was attached a monastery, or we might call it a chapter, the members of which enjoyed privileges similar to those of our canons." 18 What Bancroft here asserts of the Aztec priests and schools may identically be asserted of those of China. In each land, too, were nunneries filled with virgins, whose lives were devoted to the services of the church: they assisted in the religious ceremonies and sacrifices and kept the sacred fire.

The priests of China and America burned incense and



CRESCENTS FROM MOUNDS.

sacrificed animals, birds and flowers, before the same character of idols. In exceptional cases in both regions human sacrifice was offered. The great number of human beings sacrificed by the Aztecs at the time of the Conquest has given this nation a supposed abject and degraded position. If Mexican history is worthy of credence, however, this horrid practice was of recent origin among the Aztecs, and arose entirely from a spirit of revenge and a war policy intended to strike terror into the hearts of their enemies. About the year 1465-1484, A. D., according to the Aztec record, they first offered human sacrifice; the record reads: "The people of Cinacantepic rebel; the Mexicans subdued them, and make such a slaughter that hardly one man remained. This they did in order to inspire terror; and they sacrificed all

the prisoners in the great temple of Mexico, which was not yet finished. All the old people say that this was the first human sacrifice in the land, as they previously sacrificed only animals and birds." 19

Human sacrifice was not confined to the Aztecs, nor is it of recent origin in Asia. In China, "In early times human beings were immolated at the obsequies of rulers, and voluntary deaths of their attendants and women are occasionally mentioned DeGuignes says that the Emperor Shanchi (A. D. 1647-1662) ordered thirty persons to be immolated at the funeral of his consort; but Kaughi, his son, forbade four women from sacrificing themselves on the death of his empress." 20 The Chinese drowned girls in sacrificing to Ho Pe, or Feug I, the river god, while to Yu Shih, the master of rain, they have long made burnt offerings; the Aztec sacrifice to Tlaloc seems to be similar. Human sacrifice was also offered at the decease of Japanese emperors and nobles since the beginning of the Christian era, and is yet permitted in Siam. In 1865 upon a French threat of war the astrologers—priests of the Siamese king, advised him to build new east and west gates to protect his royal palace. The material was instantly prepared and a deep ditch dug for the foundations. At midnight the Sanhuang, or secret council of Royal Judges ordered subjects for sacrifice; then officers lounged around the gates until the market people came at early dawn with market produce; when hap-hazard they seized six innocent and unoffending victims. "No petitions, payments, prayers can save them;" they were doomed to sacrifice by a "custom having all the stability and force of Medo-Persic land." On an "auspicious day," chosen by the priest-astrologers, the innocent victims "are mocked with a dainty and elaborate banquet, and then conducted in state to their fatal posts of honor. The king and all the court make profound obeisance before them, his majesty adjuring them earnestly "to guard with devotion the gate, now about to be entrusted to their keeping, from all dangers and calamities and to come in season to forewarn him if either traitors within or enemies without should conspire against the peace of his people or the safety of his throne." 21 Thereupon the victims were publicly sacrificed and the foundations of the gates laid in their blood; they became the gates guardians. The parallel between this recent sacrifice and the Aztec sacrifices to Tezcatlipoca must strike the student as very remarkable; it certainly demonstrates their common character. In offering human sacrifice the Aztecs differed from the Japanese, Chinese and Siamese only in degree; they were all of a kind.

19. Trans American Eth. Soc. vol 1, p 137, Gallatin.

20. The Middle Kingdom, vol 2, p 250, Williams.

21. English Governness at the Siamese Court, p 218, Leon Owens.



The religion of the civilized Mongolian nations of Asia and America was a polytheism. Their gods, however, were divided into two classes; (1) the supreme essence, and (2) deified heroes. Nguk Huong Seong Ta, the "Jade emperor or supreme ruler," was the highest divinity in the Taoist pantheon; he is the god to whom all others report, and is the representative of Tao, the supreme essence, and such is his supreme and invisible character that Doolittle says, "the common people have no image of this divinity in their houses when they worship him." 22 Of the highest Aztec divinity, Teotl, the supreme essence, it is likewise said by Bancroft; "To the most ancient gods belonged the divinities of nature as well as the highest being called Teotl, God. He was perfect, independent and invisible, and consequently not represented by any image. 23 Of the Mayan deities Brinton says, "Back of them all, indeed the source of them all, was Hunab Ku, "the Divine One;" but of him no statue and no picture was made, for he was incorporeal and invisible." 24

Besides this supreme, invisible and statueless deity the gods of the Chinese, Aztecs and Mayans were but deified heroes; they were men and women once, were culture heroes or warriors before they were apotheosized. Ma Chu, the "Queen of Heaven," lived in the Hung Hua prefecture during the Sung-dynasty; Ling Chui Nā, addressed by the tender title of "Mother," was born in the southern suburbs of Fuh-Chau during the Tang-dynasty; Kuang Tá, the Chinese god of war, was a distinguished officer who lived and fought under the banners of Hau; Fuh Chou Chu Su, the god of medicine, was once a distinguished physician, while I Kuang Tai Mong, the god of surgery, was a native of the Loo Choo islands; all the Chinese gods have birthdays like mortals. 25 Huitzilopochtli, the Aztec god of war, the son of Coatlicue, a virgin of Tulan was a famous warrior. Tezcatlipoca and Quetzalcoatl once lived and warred in Cholula. In speaking of Teotl, the supreme Aztec deity, Bancroft says. "All the others to whom they sacrificed were men once on a time, or demons." 26 The supreme deity of China, Mexico and Central America, then, was invisible and without representation by picture or statue; all others were but deified heroes.

There is another remarkable similarity to be mentioned. The supreme god of the Aztec was called Teotl. He was incorporeal, invisible and never represented by carving or picture. Teotl was not connected with mankind, nor with human history or hero worship; Teotl was a god principle; Bancroft and other authorities speak of it as the "Supreme Essence." 27 One of the

22. Social Life of the Chinese, vol 1, p 257-8, Doolittle.

23. Native Races, vol 3, p 184, Bancroft.

24. A Primer of Mayan Hieroglyphs, p 37, Brinton.

25. Social Life of the Chinese, vol 1, p 262-275, Doolittle.

26. Native Races, vol 3, p 191-271, Bancroft.

27. Native Races, vol 3, p 191, Bancroft.

great religions of China was the worship of Tao, the supreme essence. Tao is defined by some as Reason or Knowledge, but by other commentators it is called the Supreme Essence, while Laotse speaks of it as the "absolute principle." 28 Teotl of Mexico and Tao of China are identical in meaning and character, each embraces the triple constitution of the universe, Heaven, Earth and Man, each of the latter being subordinate to and produced by the supreme essence.

There is another striking similarity between Taoism in China and Teotlism in Mexico which it is interesting to notice. In speaking of Teotl, Klemm says, "In opposition to him is the evil spirit, the enemy of mankind, who often appears to and terrifies them. He is called Hacatecolotl, that is to say Rational Owl." 29 There are two Taoist ideas suggested by this name for the Aztec evil one. First the use of the term "rational"—the Taoists are known as Rationalists—the second is the impish character given to the owl, Satan, or the evil one. Among the Taoists the owl is supposed to be the bird which calls for the soul of the doomed and carries it away to the abode of the dead, which, in common, the Aztecs and Taoists both locate in the north. Among the Taoists, "it is a common saying that this bird is a transformation of one of the servants of the ten kings of the infernal regions, i. e., is a devil under the guise of a bird." 30 It would be an interminable task to present a detailed comparison between the deities of China and America; a brief list will, however, suffice to prove how greatly they resemble in number and character:

## COMPARATIVE LIST OF DEITIES.

CHINESE	AZTEC-MAYAN.
Tao, the Supreme Essence, God.	Teotl, the Supreme Essence, God.
Chaos, before the beginning	Chaos, before the beginning.
Tao-Kech, bisexual life.	Gukumatz, bisexual life.
Pau Ku, male ancestor, Adam.	Xpiyacoc, male ancestor, Adam.
Nu Kau, female ancestress, Eve.	Xmicane, female ancestress, Eve.
Ti Yu, the abode of the dead (north)	Mictlan, the abode of the dead, north
The evil one, the owl.	The evil one, the owl
Tai Sang, lord of the under world.	Mictlan Tecatli, lord of the under world.
Lung Chui Na "Mother."	Tonantzin, "Our Mother."
Ma Chu, "Grandmother."	Tociten, "Our Grandmother."
Taao Chun, kitchen god.	Tepitotens, household god.
Hua Sheu, god of fire.	Xiuh-tecutli, god of fire.
Ngu Kieng Kung, god of thieves.	Hozoltxotli, goddess of thieves.
Kuan Yu, god of war.	Huitzilopochtli, god of war.
Ioh Uong Chu Su, god of medicine.	Oxomococipactonatl, god of medicine.
Tih Chu, the sun god.	Ionathiu, the sun god.
Hou I, the moon god.	Mextli, the moon god.
Hou Chi, god of agriculture.	Centeotl, goddess of agriculture.
Shen Nung, "divine husbandman."	Ghanau, god of fertility.
Tsai Shen, god of merchants.	Yaca-tecutli, god of merchants.

28. A Chinese Mystic, Arena, Dec. 1892, Bixby.

29. Native Races, vol. 3, p 184, Bancroft.

30. Social Life of the Chinese, vol 2, p 324, Doolittle.

## "Short black devil."

Lu Pang, god of Artizans  
 Yu Shih, god of water.  
 Kuang Ingkak, goddess of children.  
 Nu Kua, serpent woman.  
 Teu Kwei, god of north star.  
 Feug Pa, god of Air.  
 I-bi, god of wine.  
 Wcu Ti, god of literature.  
 Yama, god of death.

## Ixtililton, "the little negro."

Napatecutli, god of matmakers.  
 Tlaloc, god of water.  
 Yoalticeti, goddess of children.  
 Cihuacoatl, serpent woman.  
 Xaman Ek, god of north star.  
 Quetzalcoatl, god of Air.  
 Acau, god of wine.  
 Ix Chebel Yax, goddess of literature.  
 Ah Puch, god of death.

Besides the deities mentioned in this short list the Chinese and American nations worshipped a multitude of other gods, one for each day of the year, for separate diseases, and for various places and elements in nature, but all on a plane of common relationship. Tezcatlipoca, the Aztec deity, holds in his hand a mirror; his name means "shining mirror;" the mirror was the Aztec symbol for the soul. 31 The Japanese Shinto temple contains but one emblem, the mirror, and it, too, is the symbol of the soul. The Taoists worshipped Yu Hu, the jade goddesses; the Mayans Ix Tub Tun, the jade goddess, while the Aztecs worshipped the same goddess as Chalchihuitlicue. Jade was sacred to the gods, and the most precious stone in China, Japan, Mexico and Central America.

The Japanese worship seven beneficent deities, the patrons of happiness, riches, food and contentment, five of whom seem to find their exact counterpart in the Mayan bacabs, the gods of agriculture, the harvests and the food supply."

## PATRONS OF HAPPINESS.

## JAPANESE GODS OF WEALTH.

Hotei (big belly)  
 Benzai (serpent being.)  
 Fukwokuji (white being.)  
 Daikoku (great black.)  
 Ebisu, patron of daily food.

## MAYAN BACAB.

Hobnil (the belly).  
 Cauzicnal (serpent being.)  
 Zaczini (white being.)  
 Hozau Ek (black one.)  
 Yum-Chac, lord of waters.

The "white being" in the Japanese list is the patron of long life, and the white hair, whiskers and eyebrows of age, justify us in likening him to Lazen; Hotei gets his soubriquet from his fat round stomach—he is the god of contentment. Benzai is the goddess of the family, hence the snake, the symbol of new life, accompanies her and fixes her character. Daikoku, the Great Black, is so called from his color. The similarity between Ebisu and Xum Chac arises from their both being lord of the bas and of foods; these five lords of happiness are so similar in character as to be very suggestive of relationship. The name Ebisu is the only aboriginal Japanese name in the list; the others are Buddhist importations from China and India, and show the migration of the gods from that region; it was but one remove farther to America, and we find them there also. The four bacabs thus become historical characters, for the Japanese and

31. Native Races, vol 3, p 182, Bancroft.



Buddhist books give us their history which may be traced from India and China, via Japan to America, and that, too, since the introduction of Buddhism into Japan in 507-531 A. D.

The philosophy and religion, then, of China and America agree in these fundamental particulars; Tao or Teotl is the Supreme Essence from which all things spring. From Chaos came life and out of bisexual life developed the male and female principles; then Heaven, Earth and Man are formed; from combinations of natural forces there was evolved a system of fours, fives and other numbers developing into a numerical philosophy. The Tae-Kah, yang and yin, and swastika, the Heaven, Earth and Man symbols are identical. Their religion was a polytheism; the emperor was the head of both church and state; they each had monasteries, monks and nuns; they each burned incense before their idols and sacrificed animals, flowers and birds on terraced pyramids, they each sacrificed human beings, the Aztecs differing in this respect only in degree, and the Mayans barely that far; the religion of Quetzalcoatl was Buddhistic in this respect; they each worshipped a multitude of deities of a similar character; their system of assigning the deities to the cardinal points, colors, elements and days was identical. From the evidence it is fair to assert a distinct relationship between the systems coming into America via Japan after the year 507, A. D.

#### ARCHÆOLOGICAL NOTE.

Strange analogies come before us as we read of the customs and habits of primitive peoples. They are not confined to the tribes or races which are in proximity but are found among those which are very remote. Among these the most surprising is that which is found in the style of house building or rather the arrangement of the house apartments, among people as widely as are the pueblos of the "Great Plateau" of the west and the Lakelanders of Borneo. The latter people built their houses on terraces or platforms which are placed upon piles above the water, each great terrace holding an entire village. The arrangement of the houses is uniform in all of the villages, and built according to a single scale and measurement; the posts which support the terraces are innumerable. The village on the terrace is divided by a plank wall, into two main parts, a front and a back part. The front part is of the nature of a verandah and is open its entire length; the back part is divided into apartments, one for each family. Between the plank wall and the verandah is a narrow passage running through the entire village, so that a person may walk from one end of the village to the other without obstruction. Every family has a compact room to itself, a verandah where they may receive visitors an open air thoroughfare where they may lounge, and a loft where they have their stores. They throw their refuse through the floors into the water.

## CORRESPONDENCE FROM POLYNESIA.

## BORINGS IN CORAL FORMATIONS.

Yesterday the leaders of the Australian coral-boring expedition returned to Sydney. The latest word from Funafuti comes up to Sept. 16, at which date the diamond drill was down 644 feet; the last 95 feet of this was chiefly in coral, no sign of any volcanic or other rock appearing. The six men who work the drill remain behind under the charge of an overseer and will continue the boring for about a month more. It is possible that the formations of the atoll may be reached which Prof. Sollas of the expedition from London, thought to be about 850 feet below the surface, judging from the evidence of the surroundings. The work of boring has been made very difficult from the variable nature of the strata gone through; for the coral rock is of very cavernous and alternates with beds of sand; this caused much jarring to the machinery and frequent breaking of the strongest cast iron wheels. On one occasion one of the workmen was repairing one of these broken wheels, when a native standing by said, "Me have wheel allee samee dat;" so he went to the root of a cocoanut tree not far off and dug up a small wheel which fortunately fitted exactly. It had belonged to Prof. Sollas' party and the Funafuti man had buried it at the root of his cocoanut tree to give fertility! Every strange or uncommon object in nature—a stone curiously shapen, an unknown substance from afar—has mana supernatural power in it and can be used as magic. The London expedition of last year failed of success, for at a depth of about 100 feet beds of sand were encountered which prevented the drills from working. But the Australian expedition took with it a supply of artesian tubing with which to line the bore. The whole depth has 4-inch tubing. Only a depth of 15 feet could be bored at a time, for, unless lined at once the sides of the bore fell in and jammed the boring rod. A powerful tanzye pump also had to be continually inside to force water down the bore and so prevent silt from being driven in through the coral by the ocean. The cores obtained from the sinkings have been carefully preserved, numbered and stored; they will be examined here and then sent on to London for further microscopic examination. It may be perhaps twelve months till the results of these examinations can be announced. It is supposed here that these results will be favorable to the Darwinian theory of subsidence, but it is also possible that the cores from the greater depths may be merely marine limestone and non-coralline. From *Darwin's Journal* I give a short synopsis of what he says about these coral formations: "In 1836 H. M. S. *Beagle* with Darwin on board as Naturalist visited the Keeling or Cocos Islands which are in the Indian Ocean about 600 miles from Sumatra. These Islands are atolls, entirely or



coral formation; at a distance of about twelve miles from the shore, no bottom was found at a depth of 350 fathoms, hence that island forms a lofty submarine volcano with sides steeper, even, than those of the most abrupt volcanic cone." As to the formation of such coral islands, it was long supposed from the shape of the atolls that the coral polypes build their walls on the edge of craters (*submarine*) and cease to work at the height of lowest water at spring tides, for they cannot live when exposed to the sun's rays. Against this theory may be urged the great size of some atolls, one being 44 miles by 34, while one in the maldives is 88 miles long by at least 10 broad. Another theory broached by Chamisso in "*Kotzebue's First Voyage*" accounts for the ring-shaped structure by urging that as the coral insects work most vigorously when exposed to the ocean waves, the outer edge of the structure grew up first from the foundation below. Against this are the soundings taken by the *Beagle* at Keeling atoll; for at a 10 fathoms depth all round, there was only living coral as clean as a carpet of turf; at greater depths particles of sand came up more and more abundant, until far out there was found nothing but sandy bottom. From these and other observations elsewhere it is inferred that coral reefs must begin at a depth of not more than perhaps 200 feet from the surface. A theory of volcanic elevation would carry many of these reefs far above the level of the ocean and yet over thousands of miles of coral areas both in the Pacific and the Indian oceans no single at all rises more above the ocean than the height to which the waves and the winds can pile up sand and fragments of rock. "If, then, the formations whence the at all-building corals sprang was not formed of sediment and if they were not lifted up to the required level, they must of necessity have subsided into it; and this at once solves the difficulty." So far, Darwin!

Several very deep sinkings have already been made through coralline limestone. At Key West, off the coast of Florida, there is an artesian bore 2,000 feet deep of which only 50 feet at the top was through recent coral, the rest being limestone, sand and sandstone. There is also an artesian well at Honolulu 1,503 feet deep through 500 feet of coral "fringing reef." As the diamond drill was not used in either of these cases, there was no core to examine.

JOHN FRASER.

## EGYPTOLOGICAL NOTES.

BY WILLIAM C. WINSLOW, S. C. D.

THE contents of the opening volume in the "Graeco-Roman Branch" of the Egypt Exploration Fund are decided upon. They will be: A fragment of the second or third century, containing most of the first chapter of St. Matthew's Gospel; a leaf containing the acts of St. Paul and Thecla; portions of a Sapphic poem, probably by Sappho; fragments of Sophocles' Oedipus Tyrannus, of Plato's Republic, of Xenophon's Hellenica, of Isocrates and Demosthenes, and of a lost comedy—about 50 lines; a part of an important treatise on metre—perhaps by Aristoxenus, the chief early authority on metre; much of a chronological work, with dates from 356 to 316 B. C.; a lengthy proclamation by Flavianus Titianus, prefect of Egypt under Hadrian; an interview between the Emperor Marcus Aurelius and a magistrate of Alexandria; a roll giving a list of the quarters and streets of Oxyrhyncus, and of their guards, in the fourth century, A. D. And perhaps the portion of Thucydides, of the first century, just found.

This fragment of St. Matthew, giving the story of the birth of Christ and dating from the middle of the second century, is simply and at once the oldest known manuscript of the New Testament! Its nature is priceless. It has the same contractions as the "Logia," and even the slight variation seen in the Syriac Mt. Sinai Gospels does not appear in this far older version. In reality, this papyrus is from the New Testament used in the days of Polycarp—by those who listened to St. John.

So, too, the portion of the fourth book of Thucydides is one thousand years earlier than our oldest text of the great Greek Historian. Its value, for comparison, is also priceless. Five freshly revealed stanzas by Sappho, and lines from that spirited Spartan Lyrist, Alcman (600-700 B. C.) will indicate how interesting a story the 286 boxes of papyri have to prolong, in true Arabian Nights archæological entertainment. But the universities and enlightened people must give us the moderate means by which to translate and publish these records of the past.

A PAPYRUS OF MENANDER has been discovered by Prof. Nicole at the library of the University of Geneva. It consists of six fragments, making up two leaves, written on both sides; the total number of lines is nearly one hundred. The play is the GEOSGO (Husbandman); and from the personages' names Prof. Nicole makes up quite a dramatic personage.

THE NEW PSALM OF DAVID, dating the sixth century A. D. is the oldest complete Bible manuscript extant. It came from a stone coffin under the ruins of an ancient public church in upper Egypt. It begins: "I was small among my brethren, and youngest in my father's house. I tended my father's sheep—My hands formed a musical instrument and my fingers tuned a psaltry. And he shall tell my Lord. The Lord himself, he himself hears—He sent forth his angel and took me from my father's

sheep, and he anointed me with the oil of his anointing." All clearly points to the authenticity of this psalm of David upon his victory over Goliath. Dr. Budge, of the British Museum, considers this psalm as among the greatest of the finds in Egypt during the last few years."

A COPPER AGE in Egypt is conclusively claimed by Dr. Berthet, chemist, who finds that the supposed bronze and copper utensils found at Nagada, are of almost pure copper throughout. These relics date from the first dynasty or earlier.

CHICAGO is being enriched with the spolia opima of our antiquities. Among the important monuments recently sent to the Haskell Museum is a group of two statues, that of a nobleman and his wife, standing on an inscribed base, with much of the original color still vivid. They are from Deshasheh, and are of the fifth dynasty, nearly 5,000 years ago.

MR. F. G. HILTON PRICE has issued a superb catalogue of the treasures in his private collection. There are 3,074 objects listed, and the illustrations in this quarto of 480 pages are many. I propose to briefly review this book, whose cost per copy in England is \$10.50. Mr. Price is an ardent follower of Petrie and on the Egypt Exploration Fund committee.

DR. MAX MULLER, of Philadelphia, has ready for the press "Love Poetry of the Ancient Egyptians," and is at work upon a new and needed text-book, on "Egyptological Commentary on the Bible." He is a pupil of the great Ebers; but we hope it will be long before he is that prophet's Elisha.

DR. RENOUF, the foremost grammarian in England of the hieroglyphic text, leaves no one to take his place, at least just yet, although another decade may see the Budes and Griffiths equally authoritative. He illustrated that these are Egyptologists and Egyptologists. Not an explorer, not abreast of discovery, he was an Egyptologist. So is Petrie, an explorer; so was Miss Edwards, always abreast of discovery. Yet she was not a grammarian; nor has Petrie such linguistic capacity. Renouf's best work is thought to be his "Papyrus Ani."

A DEFICIT of some \$18,000 was reported by H. A. Grueber, the accomplished treasurer of the Fund, at the annual meeting in November. This, notwithstanding such a brilliant year for "results" in every direction. Will not friends to exploration write to me at 525 Beacon street, Boston, for circulars to use to interest others in so genuine a course.

## ETHNOGRAPHIC NOTES,

BY A. S. GATSCHET.

*Gypsy town names.* From a communication purporting to come from Paul Kescer, "playwright, ethnologist and student of gypsy life, and printed in a Washington daily newspaper, we gather the following: The gypsies have names of their own for most of the large cities of England and the United States. They are quite opposite, for they generally allude to a characteristic feature of each. To mention only the American cities, Pittsburg is named by them Kanlo-Gav, "black city;" New York Boro-Gav, "big town;" Milwaukee, Levinor Gav, "beer town;" St. Louis, same; Philadelphia, Paunomengo, "white city;" evidently from its door-steps of white marble; Boston, Pureno-Gav, "old town;" Chicago, Sigmengo, "quick city;" Brooklyn, Pudgegav, "bridge town;" Washington, Belunigav, "queen city;" Gloucester, Mass., and other sea-coast towns, Matchenesko-Gav, "fish town."

The English gypsies have an array of family names, each belonging to a large number of individuals. They are taken from the English language and possess a correlative in the gypsy or Rommany language, which is, or attempts to be, a translation of the English names. These same principal families also occur in America, to which country they emigrated at an early date. Thus the Lees are known among them as "leeks," or Purrums; the Stanleys as "stone people" or Bar-mescro; the Hernes as "duck-people" or Rossar-mescro; the Lovells as "love-makers" or Caumloes; the Frays as "horse people," Grays the Coopers as "wheelwrights" or Vardo-mescro; the Smiths as "horseshoers" or Petulengroes.

The language in which these names are worded is the Romany; its main stock is made up of Hindustani terms, a country from which the first bands of this exotic people emigrated westward in the 14th or 15th century of our era. The other portion of the Rommany vocabulary is made up of words picked up by this people on their transit from India to Western Asia, Egypt, Europe and America. The fanciful way in which their above family names are composed reminds the writer strongly of a colloquy held in a crowded street car of Washington, D. C., during a session of Congress. Three politicians in a state of high exhilaration entered the car and one who "could not help himself," fell unceremoniously into the lap of a lady occupying one of the seats. "You must be a Pawnee," said the second one, while helping him up again on his legs. "No sir, he is evidently a Laplander," said the third companion, rather reproachingly. But the husband of the lady, who had become the victim of the fall, "put them all on the right track by saying: "I thought he was a Cherokee!" a remark which was received with due applause. Our literary readers will at once see that



this was a case of very subtle tribal etymology; Pawnee is "Paw-knee," a Laplander, "lands in the lap," and a Cherokee is "chair-rockee."

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*Dr. Paul Ehrenreich, Anthropologische Studien, über die Urbewohner Brasiliens, vornehmlich der Staaten Matto Grosso, Goyaz und Amazonas (Purus-Gebiet.) Nach eigenen Aufnahmen und Beobachtungen in den Jahren 1887 bis 1889. Mit zahlreichen Abbildungen und Tafeln. Braunschweig, Fr. Vieweg und Sohn. 1897. 4, viii 168 pp.*

It is the undeniable merit of Ehrenreich's publication to offer the first anthropologic data coming from the interior of South America. It attempts to solve the important problems of "what is the constant part in race character, and how far does racial variation extend?" This implies also the explanation of the bodily and spiritual individualities of the American race as "the product of its own geographic province." Dr. Ehrenreich, a native of the city of Berlin, or as Keronden Steinen jocosely calls him, "ein Spreathener," was eminently qualified by previous labors in South America to undertake the somatologic work, the results of which are now before us. He had studied the Botocudos in Espiritu Lanto long before he started, in company with Karl v. d. Slinca, on his second expedition to the Shingu and its tributaries, and we owe to him a thorough knowledge of their language and also of the Karaya language spoken on Araguaya river.

After finishing his explorations on the upper Shingu in 1889 separated from the above named party and alone descended the Araguaya river, ascending from its mouth the Amazon or Marañon to the Purus. The tribes more especially investigated there by him were the Ipurinas, Yamamadis and Paumaris, all of whom are largely represented in the portraits and measurements published in the volume. Ehrenreich took especial care to get representatives of the four great racial troupes of Brazil, the Caribs, the Tupi, the Arowaks and the Ges; and the 184 individuals that he measured and photographed belong to seventeen tribes. The linguistic division of the Brazilian tribes into families is not attempted here ex professo, but in the author's full long treatise on Brazil's races and languages in "Petermanns Mittheilungen," May and June 1895, with map, complete information is furnished on the subject, and during the perusal of this volume should be compared throughout.

The discoloration of the skin among the Pintos or Purupurus, "the spotted ones," forms a chapter of peculiar interest. This is the outcome of a disease and obtains all through northern Brazil, but more especially among the three tribes last named. It is of high interest to study the faces of the Indians photographed by the Doctor, most of them having been taken from the side and front as well. Some look wild, sturdy and threatening, others as mild, happy and well-fed as could be wished for. The tallest

tribe seen was that of the Bororos on the San Lourenco river, their stature exceeding 1.70 meters.

The preface of 44 pages discusses the principles that are now considered as the leading ones in anthropologic and ethnographic research its perusal should not be missed by anyone taking interest in these researches.

FROM DR. J. WALTER FEWKES, a number of illustrated treatises have been received lately, which combined with previous ones give an almost complete idea of the ceremonial customs and also of the civil institutions of the *Moki* people of Arizona. Of all the tribes in the U. S. their pueblos have remained in an aboriginal status probably more than any others and this comparative freedom of American influence makes their study so interesting. Fewkes' pamphlets may be arranged in the following order:

1. Tusayan totemic signatures; in *American Anthropologist*, January, 1897, pp. 11.
2. The Tusayan ritual; a study of the influence of environment on aboriginal cults; in *Smithson, Report for 1895*, p 683-700.
3. The Mishongnavi Flute Altars; in *Folklore Journal*, IX, No. 35 p 15 and plates.
4. Morphology of Tusayan Altars; in *American Anthropologist*, May 1897, p 16.
5. Preliminary account of an expedition to the cliff villages of the Red Rock country, and the Tusayan ruins of Sikyatki and Awatobi, Arizona, in 1895; in *Smithson, Report for 1895*; p 557-588 and plates. the ruins of these two pueblos were found to be very considerable in extent and extremely noteworthy as to their artistic products.
6. Tusayan Katchinas; from the 15th annual report of the Bureau of Amer; Anthropology; p 251-313, Lex. 800, 1897.
7. Tusayan Snake ceremonies; in the 16th annual report of the Bureau of American Ethnology, p 273—31, 1897; Snake ceremonies are common among all pueblos of New Mexico and Arizona; but those described by our author are those of Shipanlovi, Shunopavi and Oraibi only.

As to the totemic signatures, a large number of totemic gentes, as eagle, sun, cactus gens, were found, all of which can be classed into the phratries of the horn, the water-house, the snake, the reed, the firewood, the rabbit, the sand (earth), the bear, the Katchina and the tansy-mustard.

## EDITORIAL.

### THE INFLUENCE OF SCENERY UPON THE CHARACTER OF MAN.\*

The effect of scenery upon the mind of man has often been noticed and much has been written about it. Illustrations of this are generally drawn from the historic lands and from the ancient people of the east. The civilized races, such as the Greeks, Romans, and other nations who formerly dwelt on the coast of the Mediterranean, are taken as examples. The Greeks are said to have owed their peculiar character and their taste for art to the varied and beautiful scenery which surrounded them. Their mythology and poetry are full of allusions to the scenes of nature. Mountains and springs, rivers and seas all come in as the back ground of the picture which represents their character and history. The same is true of the Romans, Egyptians, Phœnicians, Syrians, Hebrews, the ancient Trojans and Carthaginians. Each one of these nations seems to have been affected by scenery. They were all, with the exception of the Carthaginians, confined within the limits of a narrow territory, and remained long enough in it to have partaken fully of the effect of their surroundings. The Romans were war like at the beginning, and bore the air of conquerors, but their taste for art and literature resembled that of the Greeks. The Egyptians were sensuous and luxurious people. Their character bore the stamp of the river Nile with its periodical overflow, its rich soil and mild climate. The type of their religion was drawn from the gods who inhabited the same river valley. The Phœnicians were a maritime people; they were the first navigators who reached the great seas. Their gods resembled those of the Assyrians and Chaldeans, but their character resembled the seas over which they roved; they did not originate, but they transported the products and inventions of the ancient world. The Hebrews had a national character which seemed to have been narrowed down to a small compass by their isolation and by their history, but their religion was as grand as the mountains of the desert, and their poetry as beautiful as the scenery along the river Jordan, which ran as a great artery through their land. It was a holy land which gave impress to the Holy Book. The effect of scenery upon human character is also illustrated in the case of the ancient inhabitants of America. This land was isolated from the rest of the world for many centuries—perhaps for thousands of years. It is supposed that up to the time of the Discovery the tribes were permanent in their seats. Each tribe had its own habitat, its own customs, its own mythology and its own history. The effect of scenery must be considered, if we are to understand the peculiarities which mark the different tribes.

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\*Suggested by the Frontispiece.



Some imagine that the Indians are all alike, that they are all cruel savages, all given to drunkenness and degradation and only waiting their opportunity to wreak their vengeance upon helpless women and children. Those who know them, however, are impressed with the great variety which is manifest among them, and are especially convinced that much of this comes from the scenery amid which they have lived. The eastern tribes may have had considerable sameness, yet the Algonquins who were the prairie Indians, and the Iroquois who dwelt in the forest and amid the lakes of New York, differed from one another in almost every respect, and the Sioux and Dakotas who were also prairie Indians differed from both of these. They were great warriors and great hunters, but had a system of religion which differed from that of any other tribe. The Sioux were cradled amid the mountains of the east, and bear the same stamp of their native scenery. They resemble the Iroquois in many respects. The same is true of the Cherokees who were allied to the Iroquois in race and language. They were always mountain Indians; but the southern tribes were very different from either. They were a people who were well advanced in civilization so far as the term can be applied to the Aborigines. Their skulls are without angles and differ greatly from the keel-shaped skulls. They were dolichocephalic rather than kumbocephalic. They resemble the Polynesians, while the northern tribes resembled the Mongolians. Whatever their original home was, their adopted habitat was in accord with their tastes and character. It did not change them but rather made their traits more permanent and stable. The tribes of the northwest coast were sea-farers; they inhabited the forest and worshipped the animals which were peculiar to the forest and took as their totems the eagle, wolf and raven, but they drew their subsistence in great part from the sea. They worshipped the animals of the seas, such as the shark, the whale, and the sculpin. Their skill and courage as navigators have never been equaled. Taking their families and the few articles of commerce gathered from the forest they entered the symmetrical and beautifully carved canoes and breasted the storms and waves of the great sea near which they lived. There was a wildness in the waves which just suited them. The sea brought out the best traits and developed the heroic character. They were the "sea kings" of the northwest. They were great navigators and great hero worshippers. The tribes of the interior, the Pueblos, the Zunis differed from all other tribes. They were surrounded by wild tribes, such as the Apaches, Comanches, and Navajoes. Whatever their origin they had remained long enough in this territory to be effected by the scenery and surroundings. They were mild, luxurious, given over to religious ceremonies, made much of mythology and had many secret societies. They built their terraced houses



taking the cliffs and mesas as their patterns, and made them so similar to the rock and cliffs that it was difficult to recognize them at a distance. They did not mould the mountains into villages as the Mayas did, but they made their houses to conform to the mountains, and took the mountain gods and their nature divinities as chief objects of worship. The contrast between the ancient tribes of this region and the wild tribes which intruded upon them was very great. The Navajoes were a mountain people and drew their religion from the mountains. They borrowed many myths and customs from the ancient Pueblos, and like them, settled down to an agricultural life; but their sand paintings and their ceremonies reveal a taste for art and a poetical imagination which are very remarkable. The lone Indian who places his wigwam in the midst of the mountains seems to be always a stranger. The scenery has no effect upon him. It makes his spirit sad and his music plaintive, for he breathes out his spirit in his music. He never has had and never will have the character which some of his ancestors cultivated amid the wild scenes. His race is doomed; his fate is sealed. He can never catch up with the progress of the time. The railroad is bound to take the place of the Indian trail; the miners' cabin must supplant the Indian wigwam. Great cities will rise near where ancient villages stood but the savage fails to appreciate the thought or the character of the people who have supplanted him. The wigwam amid the mountains is a symbol of what he is, but the locomotive at its side is an emblem of progress and of promise to those who will use their opportunities. The mountains are in the back ground—they suggest the possibilities which are before the settler. They interpose barriers but the barriers themselves are fraught with good influences. Freedom has always dwelt among the mountains. Reverence for the almighty has also prevailed. The leveling process must cease and man become more elevated in his thoughts as he rises to the altitude of these great heights.

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#### DATE AND PLACE OF THE EXODUS.\*

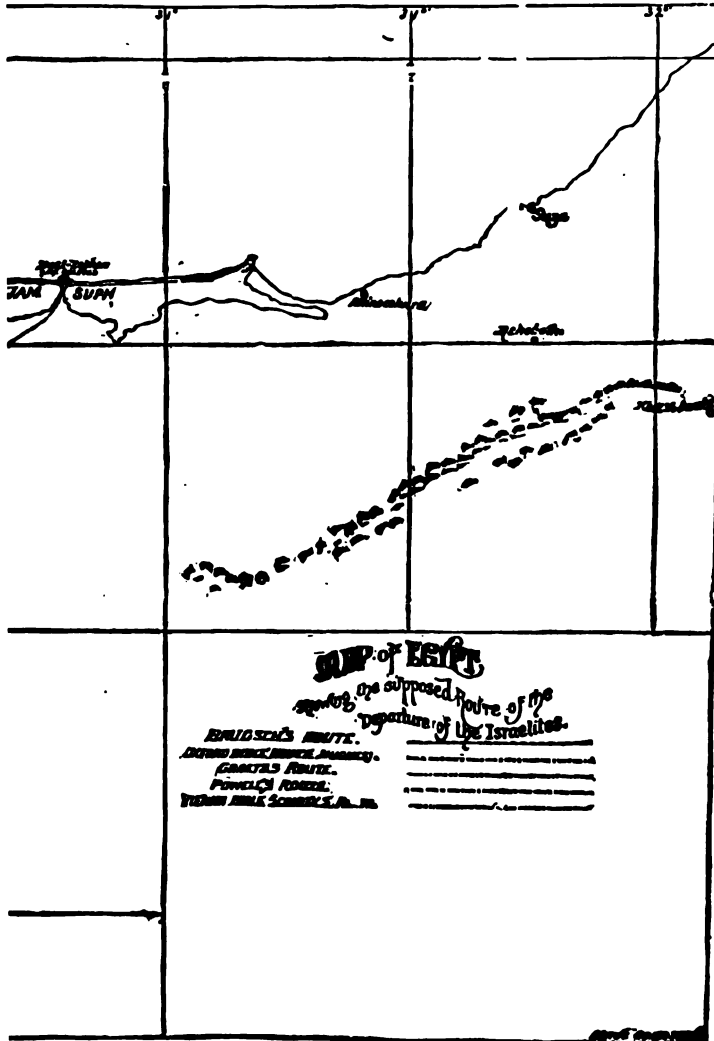
The appearance of the book by Rev. S. C. Bartlett, president of Dartmouth college, entitled, "The Veracity of the Hexateuch," has given rise to the renewed study of the date and the place of the exodus, as confirming the Scripture record. There are certain "ear marks" or incidental points in the Scripture text, which show that the writer was familiar with the scene and lived near the time of the event. Archæology has now reached a stage at which, it will be safe to say, that certain points are established which are confirmatory of the Scripture record as they are founded upon facts.

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\*For illustration see the map.



ance in which the chariots and charioteers, 2,500 in number, mentioned a dozen times. He fought the great battle on Orontes, with the Hittites. Amenophis II is now regarded the Pharaoh of the Exodus. He was a weaker monarch than Sesosis. The date of his reign is 1350. Nearly all the Egypt-



ists are agreed upon this date and name. Among them are A. H. Sayce, Brugsch, R. S. Poole. Mr. Poole says, minute accuracy of the text is inconsistent with any later date. It shows a knowledge of Egypt under Ramses. The condition of the country, the chief cities of the frontier and the

composition of the army are correctly described. Egyptologists who have no theological bias accept the text as an authority to be cited side by side with Egyptian monuments. Prest. Bartlett says, "Theories however ingenious resting upon the introduction of supposed but absolutely unknown writers, compilers and editors, upon skillful dissections of the text into parts and often into comminuted fragments, transpositions "ad libitum," rejections and assumed omissions, need not count for much with men who are governed by evidence and not by speculations."

2. The place of the departure. The discovery of the Store Cities at Pithom marks an epoch in Egyptology. It is familiar to most readers. Here excavations were made by Petrie in 1883. Miss Amelia B. Edwards has described the three qualities of brick discovered here, those made with straw, with reeds and mud. Thus the monuments confirm the Scripture record. The explorations of M. Naville have thrown additional light on the subject. Here was an enclosure of enormously thick walls, comprising a space of 50,000 square yards, with the remains of a temple and store-houses built for gathering provisions necessary for armies about to cross the desert, and for caravans on the road to Syria.

There has been a variety of opinions as to the route the Israelites took in their departure from Egypt. No one seems to doubt the fact, but the question is whether the Scripture account can be reconciled with the geography and archæology of Egypt. It is well known that Pithom and Succoth are in the northeast part of Egypt, and not very far from the Mediterranean sea. It was the seat of Empire for Rameses, the kings who reigned about the time the exodus took place; between this place and the "Bitter sea," or sea of Mara is a long interval of more than a half of a degree of latitude. Brugsch places the route near Migdol, a little south of Pithom and represents that the people passed along near the seashore to the Eastward but finally turned down toward the wilderness and encamped on the east side of Suez, and then marched into the wilderness of Sinai. Four geographical points which the Scriptures mention. Ramses Succoth Etham, and Migdol, a day distance from one another, have been identified, and a letter written thirty centuries ago reporting a journey from the Royal Palace Ramses. It was here, in the Sarbonian bog, near the sea-coast that a great wave took by surprise the Egyptian cavalry and the war chariots. This is known as Powell's route. [See map.]

3. The route taken. Mr. Naville says: "In going to Canaan they had the choice between two different roads. There was one in the north, which, passing through Tanis and Daphæn, reached the Mediterranean and skirted its coast. It was decidedly shorter, but it passed at first through cultivated and well irrigated land, and also through important fortresses like



Tanis, with large garrisons. It was the way of the great conquerors of the XVIIIth dynasty, and it is styled by Scripture 'the way of the land of the Philistines.' From the first, before any other indication is given as to the direction they were to follow, it is said that 'God led them not by the way of the Philistines, although that was near.' The other was the southern road, which their ancestor, Jacob, had taken when he came to Egypt, since, according to the Septuagint, it was at Hero-opolis Pithom, that father and son had met after many years of separation. A few years ago the Bedouins coming from Syria frequently followed the same route, which was less convenient for an army but well adapted for a people of nomads.

"At Etham the Israelites received a command which at first must have seemed to them most extraordinary. 'And the Lord spake unto Moses, saying, Speak unto the children of Israel that they turn back and encamp before Pi-hahiroth, between Migdol and the sea, before Baal-zephon; over against it ye shall encamp by the sea. And Pharaoh will say of the children of Israel, they are entangled in the land, the wilderness hath shut them in.' \* \* It is not said to the Israelites merely that they are to stop near the sea in the most favorable camping ground, or something of the like. They are to reach a definite spot, the landmarks of which are given,—on the north Pi-hahiroth, the sanctuary of Osiris; on the south, Migdol, the watch tower on the hill, now called the Serapeum; in front, the sea; and on the opposite side the shrine or the stone of Baal-zephon. The reason of this description seems to be the following: at that particular spot a phenomenon occurred which was to be the means of escape for the Israelites—the sea recedes under the influence of the wind. 'The Lord caused the sea to go back by a strong east wind all the night, and made the sea dry land, and the waters were divided.' There is nothing extraordinary in this taking place in the part of the sea between Lake Timsah and the Bitter Lakes; there the slow rising of the ground, which in later times cut off Lake Timash from the Bitter Lakes, was already being felt; the sea must have been shallow and probably not very wide. I should even go further, and say that it had been known before that this phenomenon occurred at that particular spot, and that this is the reason why the spot is pointed out so exactly to Moses; that is also, in my opinion, the reason why the Pharaohs built there a khetem, or stronghold."

4. The place of crossing the sea. There is more uncertainty as to this, as no monuments were erected to commemorate the story. Three points are suggested, one south of Lake Timsah near Serapeum, advocated by Naville, Ebers, Poole, de-Lesseps. Another between the Bitter Lakes and the Gulf of Suez. The third, maintained by Robinson and held until recently by many scholars, is situated near Suez. The theory of

a northern passage not through the Red Sea, but by the Serbonian Bog, was advocated by Brugsch, but this has never been accepted. The northern one was where Napoleon crossed in 1799, and would have been drowned on his return but for his presence of mind; The southern one has always been accounted the safer. It is worthy of notice that there is a large plain for encampment, ten by eleven miles in extent, having the sea or gulf on the East, and the mountain Jebel Atakah and two fords, one north of Suez, the other south of it, formerly passable at low tide, now also, except where the canal channel has to be crossed by boats. Extensive shoals extend far out in a southeasterly direction, and a long narrow sand-bank reaches towards them from the eastern shore, leaving at low tide a small chanel some 780 feet in width and from three and a half to five and a half feet deep. But at high tide the width is about three miles, and the elaborate map of the Suez Canal Company gives the difference between highest and known tides as ten feet and seven inches. Here are the conditions for the safe crossing of the Israelites and the drowning of the Egyptians. The statement of the Scripture narrative that the Lord "caused the sea to go back by a strong east wind all night" conforms to the fact mentioned by the travelers Wellsted, Schubert and Tischendorf, namely, the great effect produced on the height of the waters by a long-continued northeast or southeast wind in connection with the tide.

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#### A GREEK CITY UNEARTHED.

Private letters just received in this country by a correspondent of the New York Tribune bring news of most important discoveries made by the German archæologists excavating on the site of the ancient Priene, in Asia Minor, opposite the island of Samos. The work has been placed in the hands of the young architect Wilhelm Wilberg, a former student and assistant of Dr. Dorpfeld.

The work has now proceeded far enough to determine its extraordinary importance. A buried city preserved almost in the completeness of Pompeii is coming to light. Up to this time no Greek city has been excavated that gives any clew to the arrangement of streets, public squares, monuments and public buildings, or to the architecture of any considerable number of private houses. Here we find a city, to be sure, of the Hellenistic period, laid out with great regularity, with streets crossing at right angles, with shops, colonnades, market places, theatres, a council house, and a great number of private houses preserved in such completeness as to display their general architecture, distribution of space, use, decoration and equipment.



South of the great square of the temple alluded to above, and closely adjoining it, has been found the great market place or agora of the city, which was surrounded on all four sides by broad colonnades, of which that on the north side was peculiarly noble and stately. Adjoining this at one end, and opening upon one corner of the agora, was found a small square building constructed somewhat like a theatre, which was evidently the council house of the city. It is marvelously well preserved. Sixteen rows of seats are still in place. The walls, doors, windows, platforms, etc., are all preserved. One of the side walls ends in a massive arch, which, as being demonstrably a work of the fourth century B. C., must rank as the earliest, or at least one of the few earliest, specimens of the arch in Greek construction. The whole building represents something entirely unique in the relics of Greek architecture.

There has also been found a small theatre in which the stage structure, the skene, is still standing entire. Three doors open from it upon the orchestra, and the proscenium, with its rows of columns and the architrave above them, remains intact. No Greek theatre as yet discovered is so perfectly preserved as this, and in the future discussions of the "stage question" this structure is likely to assume a leading place.—*Scientific American*, Dec. 1897.

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#### ANCIENT BATTLE FIELDS.

The papers have been full of descriptions of the remarkable find of skeletons on the Arkansas river in the Indian territory. It is said to be a very ancient battle field, as many of the skulls bear the marks of wounds made by an arrow. The opinion has been expressed by Prof. Walters in the *New York Sun* that the battle was fought between the Mound-builders and the Mayas, some 20,000 years ago in which 75,000 warriors bit the dust. If the Professor would add another cipher to both numbers, he would produce a sensation and his archaeology would suit the lovers of the marvelous. The burying ground is said to cover thirty acres. Tons of human bones were brought to light. They were covered with two distinct strata which formed in geological periods. It was one of a long series of sanguinary encounters with the Mayas who sought to gain possession of North America. This is the first record of the Mayas having reached the Arkansas river. It is very important if it is only true!

## OUR NEXT VOLUME.

THE AMERICAN ANTIQUARIAN AND ORIENTAL JOURNAL has now reached its twentieth volume.

Great progress in archaeology has been manifest during the period of its existence. The field of study and exploration has greatly widened. The editor has provided for this by establishing different departments in the magazine and securing the aid of competent associates who are following specialities. These will furnish notes and keep the readers informed about explorations and discoveries in all parts of the world. The associates and contributors are among the best scholars in America. During the year 1898 the associates will be as follows:

DR. G. D. BRINTON, Philadelphia; WM. H. HOLMES, Washington; A. S. GATSCHET, Washington; WM. C. WINSLOW, D. D., LL. D., Boston; G. A. DORSEY, Chicago; JAMES DEANS, Victoria, B. C.; HON. JAMES WICKERSHAM, Tacoma, Washington; REV. JOHN MCLEAN, Canada; DR. J. H. MCCORMICK, Gaithersburg, Md; JOHN FRASER, LL. D., Sidney, Australia. Among the contributors for the last year the following may be mentioned: REV. WM. BEAUCHAMP, G. E. LAIDLAW, LEWIS W. GUNCKEL, H. S. HALBERT, DR. CYRUS THOMAS, T. H. LEWIS. The following new contributors have been secured for 1898: PROF. J. H. BREASTED, PROF. EDMUND BUCKLEY, PH. D., of Chicago University; PROF. CHARLES HITCHCOCK, of Dartmouth college; H. G. PERKINS, of University of Vermont; PROF. WARREN UPHAM, Minneapolis; PROF. JOHNSON, of Johns Hopkins University.

A new department devoted to *museums* has been established to which various curators will contribute. Among the museums already on the list, are the following: Haskell Museum and Walker Museum of Chicago, Museum of Natural History of New York, Museums at Toronto, St. Paul, Philadelphia, Tacoma, Nashville, New Orleans. Our readers will be informed as to all accessions to these, and so get a birds-eye view of archæological relics gathered in various parts of the country. The design is to make the AMERICAN ANTIQUARIAN as broad as possible. It is expected that Librarians, Curators and archæologists generally will place it on their tables, and will find it the best source of information about all departments and all fields. We thank our readers for their continued patronage, and hope they will recommend the magazine, and aid us in increasing our subscription list.



## JEWELS OF THE ANCIENTS.

There is a charm about antiquated jewelry as illustrative of the prevailing tastes of former times and methods of treatment in the jeweler's art. The enormous quantity of jewelry that has disappeared is a source of wonderment; the most valuable of the ancient jewelry extant has been rescued from the tombs of the original possessors. The analogy in style and even in the selection of objects in the jewelry of a number of ancient nations is one of the marvels of history; but it is to be attributed to the migrations or dispersal of races and the wanderings of the fabricators.

Art has had an inherent tendency to diffuse itself and its vitality, and processes that have been disused or forgotten have subsequently been revived, as was the case with *niello*, which was practiced in the seventh century, but was subsequently abandoned until its revival by a Florentine goldsmith in the seventeenth century. Certain similar characteristics are observable in Greek, Etruscan and Roman jewelry, as in the wave ornament and the occasional use of the human figure with its practice of torsion in different degrees.

The jewels obtained in the supposed "tomb of Priam," are not very dissimilar from those unearthed by Schliemann at Mycenae, whether necklaces, brooches, bracelets, earrings, beads or spiral forms of twisted wire.

The jewelry found at Cyprus by Cesnola corresponds in several respects to that of the Greeks and includes beetles of green stone set in gold, not unlike the Egyptian, Persian and Mexican jewelry. The latter is, however, much ruder. In contrast to the similarities referred to is the jewelry of Assyria, with diminutive, decorative characteristics of fabricators, free from outside influence, following uninquiringly traditional forms.

## FOLK TALES OF FRANCE.

*Tales of Lanquedoc*, by Samuel Jacques Brun of Leland Stanford Jr. University, with an introduction by Harriett W. Preston, [illustrations by Ernest C. Peixotte]. William Doxey San Francisco, Cal., 1896, publisher.

The tales from the South of France give to the reader a new phase of the peasant life in that country, and present charming stories from a section but little known in this direction.

For the most part the tales are first hand, the uncle of the author, M. Clement Brun, of Fontane's, France, furnishing a written version of them as he had received them from the great grand father of the author.

The theme consists in the narration of the travels of the elder Brun when a young man, to his family in his old age, when clustered around the roaring open fire, in winter evenings, much after the style of the "Tales of a wayside Inn." The various tales are woven into the thread of the narrative, and usually took the form of a story told him by some peasant, to in connection with some place or custom which he saw upon his journey.

"How Young Anglas became a Marquis, or the story of the Ducks, the Ants and the Flies." "The Blind Man's Story," and "The Marriage of Monsieur Arcanvel or the Story of the Gloves of Louse Skin," tell of the days when animals could speak, and the first and last, show how by cunning and supernatural power, they repay the kindness and consideration which the young hero had shown them, by performing wonderful tasks, in his stead, thus allowing him to win the reward, of the King's or Noble's daughter for a wife.

The Blind Man's story shows how right will triumph over thuggish, and the latter made to suffer; it also describes one of the early animal conventions.

The book has a charming appearance and the interest of the reader is held to the end, and regret is felt that the author stopped. The number three pervades the stories, three people, three animals and three trials etc., and is more pronounced a feature than is usual, in stories from Western Europe.

J. H. McCORMICK.

## DISCOVERIES IN CLASSIC AND BIBLE LANDS.

*Parts of the Iliad.* Students of Greek are much interested in the reports of the discovery of a new version of parts of the Iliad among fragments of Egyptian papyrus in Dublin. Eighty lines or parts of lines have been made out, taken from books 4, 8, 21, 22 and 25, and out of these eighty lines thirteen are new. The manuscript is supposed to be of the third century, before Christ. Prof. Mahaffy thinks that if an Egyptian Iliad older than the Alexandrine revisions turns up, it will be at least fifteen per cent. longer than the edition we know, so greatly was it pruned by the revisers.

*Accessions to Ancient Literature.* In 1889 Dr Edward Glaser found in Southern Arabia 1,031 clay tablets, (and these tablets were the materials which the earlier races used as writing materials for such documents as they wanted to preserve.) Since Mr. Glaser's discovery M. de Sarec, a French explorer, has found at Keo in southern Babylonia, a library of 33,000 tablets, and Mr. Haynes, who was working for the University of Pennsylvania, has found in northern Babylonia a library of nearly as many volumes, this being at Niffer, or the ancient Nippur. In Egypt there have been discovered many tablets at Tel el A-mar-na, and many tombs, palaces, mansions and cities have been exhumed. These are all bearing rich stores of knowledge. They are also confirming the correctness as well as the antiquity of the scripture record.

*The World's Early History.* It is astonishing how the progress of discovery is laying open the secret of the world's early history. Everyone knows that the most ancient records of civilization are to be found in Egypt and Babylonia, and the problem is, at what time and in what way did they

civilization begin? The last year has made it probable that Egyptian civilization began by an invasion of an Asiatic race that conquered and assimilated with an indigenous race, at we do not know what early date. A somewhat more definite conclusion seems to come from Southern Babylonia, if we may trust the results claimed in a volume of Babylonian texts issued this last year by Professor Hilprecht, of the University of Pennsylvania, as the result of his studies of the remains found by that university's excavations in Niffer. He accepts Sargon I, as all scholars now do, as a historical and not a mythical king, and agrees with them in accepting the date assigned to him by Belshazzar's father, Nabonidus, of about 3800 B. C. But he finds that a long series of kings reigned before him in Niffer and Tello (Nippur and Shirpuria), and he gives the historical inscriptions of one of them, Lugal-zaagisi, who must have reigned from 4000 to 4500 B. C.; and in giving this date he is in substantial accord with Hommel, Heilprich and Maspero. But what is especially interesting is his conclusion, which must await the verdict of other scholars, that this Lugal-zaggisi, who claimed to rule from the Persian Gulf to the Mediterranean was the first known Semitic

*Relics Near the Roman wall.* Explorations of the Roman wall near Aesica, Great Chester England, has brought to light many interesting things. An inscription found at Aesica in 1761 records the fact of a rebuilding of a granary in the reign of Severus Alexander, about A. D., 230, at a time when, probably owing to some special dearth or famine, orders were sent throughout the Northern British provinces that the granaries should be put into order and repair.

From time to time small portions of the buildings at Aesica have been dug up and demolished when the adjacent farm buildings required repairs or extensions; but, generally, the camp is the least disturbed on the line of the wall, and affords a rich mine for the antiquary, as is proved by the large find of beautiful jewelry got last season in the guard chamber of the south gateway. Mr. William Woodman, on whose farm the camp is situated, takes a keen antiquarian interest in the work. Already large quantities of Upchurch and Samian ware, beads, buttons, buckles, and iron implements have been found, one of the latter being very similar to a cobbler's knife, and another being a sickle, somewhat similar in shape to those at present in use, but much smaller. THE ROMAN SICKLE, as is shown by a figure on the Trojan column at Rome, was used like that brought into Northumberland during the present century by the imported Irish reapers, who turned over the corn and cut it with a chopping downward stroke from a smooth-edged sickle, the Northumbrian sickle being toothed like a saw, and used by being drawn through the corn toward the reaper.

A most valuable collection of Indian relics has been presented to the Wyoming Historical Society by Mrs. Andrew J. Griffith of West Pittston. The specimens were so numerous as to make a whole wagon load. They represent many years patient collecting by the late Mr. Griffith and are with a few exceptions all local to the Wyoming Valley. It is undoubtedly one of the largest collections ever made in this region, yet Mr. Griffith was so modest concerning it that few persons outside his family ever knew there was such a collection. The specimens include stone axes, ceremonial stones, deer skinners, arrow and spear points, net skinners, lap stones, pestles, Indian paints, beads, pipes, fragments of pottery, and probably others not included in the above notation. Here is a fine specimen of a pot, unfortunately in fragments, but they are in such good condition that they can probably be restored. Some of the spear points are splendid specimens.

*Hezekiah's Wall.* The following item which came to hand June 1896 when compared with later reports is quite interesting, as it shows how expectations are voiced in the old cities:

A newspaper published in Jerusalem, printed in the Hebrew language, states that Mr. Bliss, supervisor of the Palestine Exploration Fund, has lately discovered, near Mount Zion, the exact course of the city walls of Jerusalem built before and during the Roman era; also a number of vases and mosaics of high historical value.

It may be well to speak more definitely as to what has been done. Dr. F. J. Bliss has now been at work two years on the southerly side of city. The present wall built about A. D., 1540, does not conform to the outline of Mounts Zion and Ophel, the southwestern and southeastern hills which the city formerly included, but passes straight over the top of Zion and between Moriah and Ophel.

There was a theory as to the line of the old wall, because a glance showed that the present wall could have no defensive strength, and that a proper defense must keep to the brow of the hills overlooking the deep valleys of Hinnom and Kedron, but it was only a theory until Dr. Bliss began work under a firman for two years, now extended for a third.

By excavating about fifteen feet Dr. Bliss has found some thirty feet of the old wall standing in place on the bedrock, which had been scraped to give it a firm rest. This wall was strengthened and protected at regular intervals by "towers," as the Bible calls them. Having gone round the outside of his field of research Dr. Bliss entered upon a crossline, running near the present wall, and is now at or near the famous Tyropœan, in which the filling from debris is about one hundred feet deep above the original surface. A reasonable hope exists of uncovering here the tombs of the kings. In fact, no monument in the history of Palestine excavation is so interesting as this.

As to what Dr. Bliss has already found, it is plain that he has disclosed the city wall as it was in Hezekiah's time. Taking the charts, which appear with many other illustrations in the quarterly report sent to subscribers and examining Nehemiah's chapters two and three, it will be seen that they agree perfectly. Nehemiah's night-ride about the ruined walls after his return from the captivity had been explained in every way but the right way, because commentators were limited to the present wall and gates; now, however, we can see just where he went, and his account becomes perfectly clear. It is so with what he says of the repair of the wall for now we have the same line of wall before our minds.

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### BOOKS RECEIVED.

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- Memoirs of the Peabody Museum of American Archaeology. The Chultunes of Labna Yucutan.* By Edward H. Thompson, Cambridge, 1897.
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